UNIT 1

تفوقك في أي عمل عليه العلامة دي ذاكرولى

Living Things



Lessons of the unit :

1. Human digestive system.
2. Human respiratory system.
3. The cell-The building unit of living organisms.
4. The importance of sunlight to living organisms.

UNIT OBJECTIVES

By the end of this unit, you will be able to :

- Name the biological functions of the human body systems.
- Examine a model of the digestive and respiratory systems.
- Identify the functions of digestive and respiratory systems organs.
- Show how to keep the digestive and respiratory systems healthy.
- Examine the animal and plant cells.
- Compare between an animal cell and a plant cell.
- Explain the role of the Sun in photosynthesis process.
- Identify producers, consumers and decomposers.

1 LESSON

Human digestive system

- We are surrounded by :
  - Living organisms as plants and animals.
  - Non-living things as water, soil and air.
- All living organisms are similar in the following characteristics :



human digestive system الجهاز الهضمى للإنسان excretion الإخراج nutrition التغذية characteristics خصائص
motion الحركة reproduction التكاثر respiration التنفس sensation الإحساس

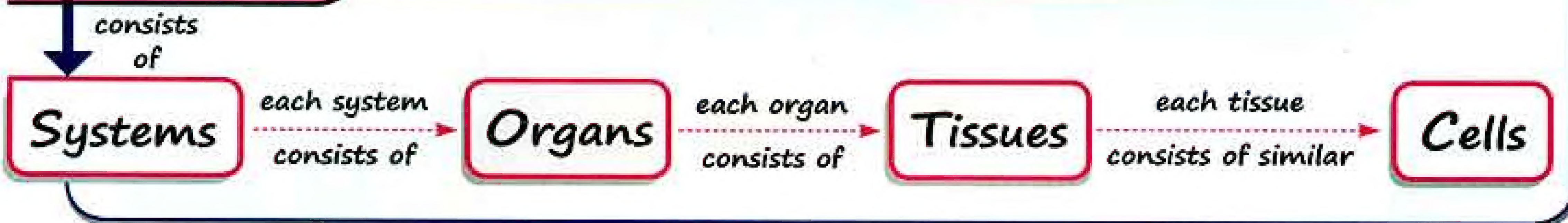
LESSON 1



The Body



The body of a living organism consists of :



This means that :

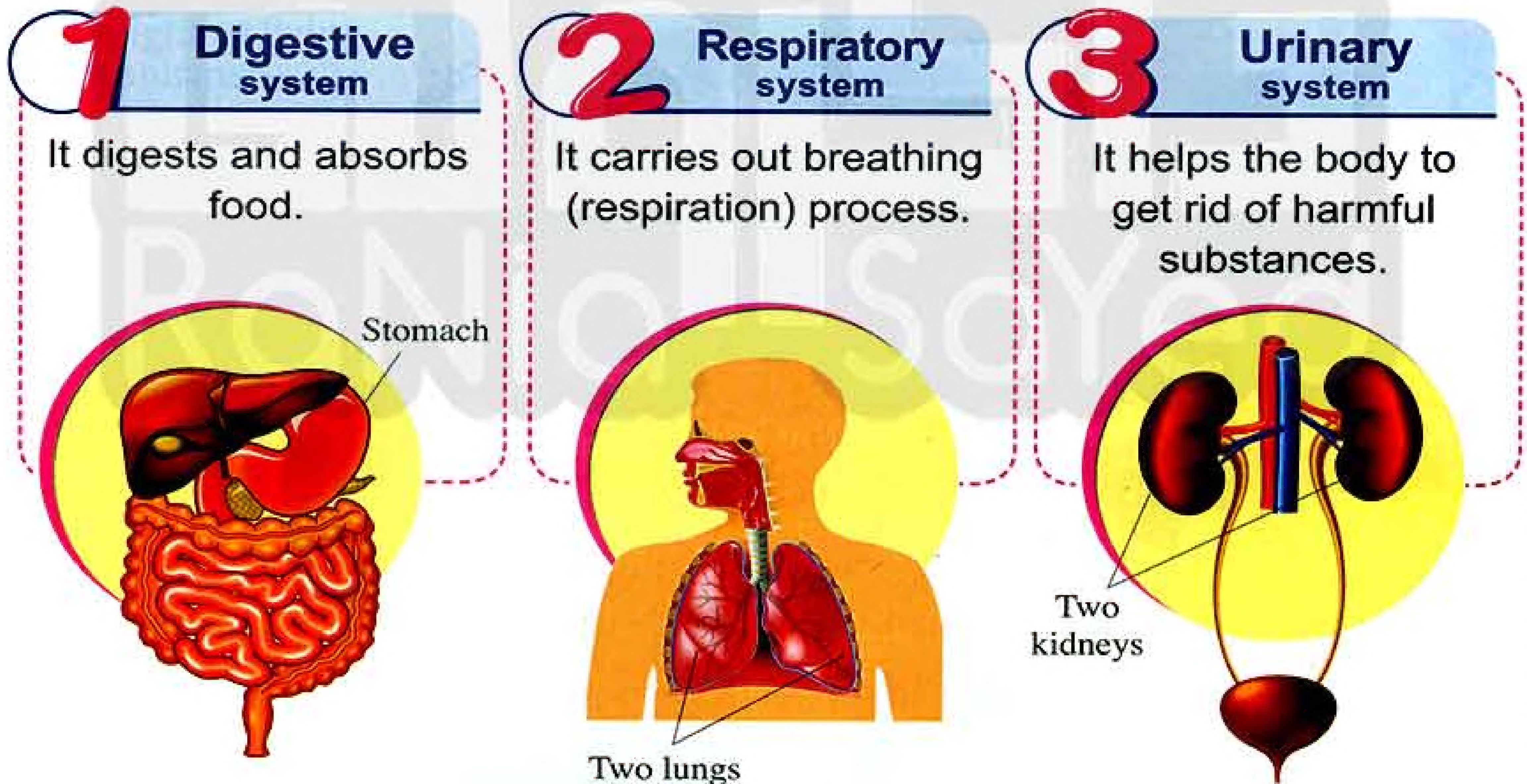
1. The **cell** is the **smallest building unit** of the living organism body.
2. The **body** of the living organism is made up of **a group of systems** that are working together in full harmony to keep the human alive.

Examples :

1 Digestive system
It digests and absorbs food.

2 Respiratory system
It carries out breathing (respiration) process.

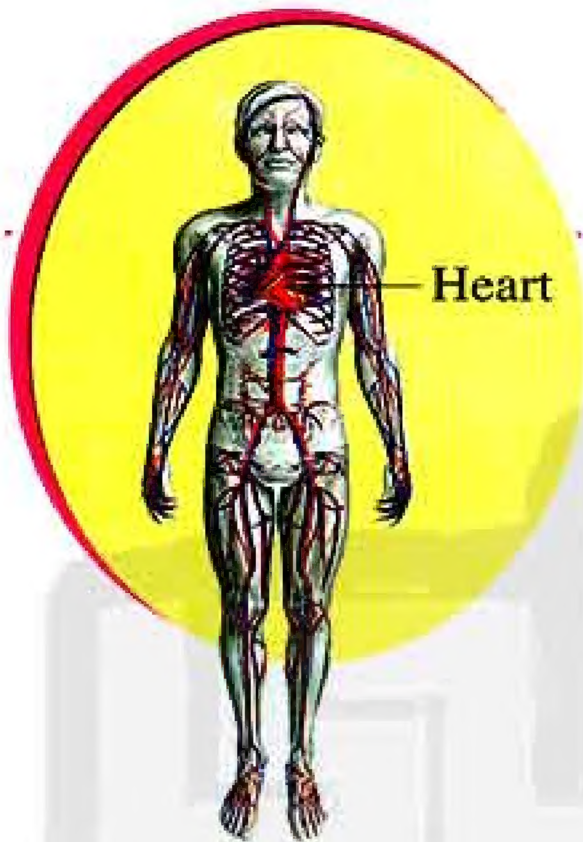
3 Urinary system
It helps the body to get rid of harmful substances.



systems	أجهزة	get rid of	يتخلص من	alive	حياً
cells	خلايا	digest	يهضم	absorb	يمتص
harmony	توافق	urinary system	الجهاز البولى	tissues	أنسجة
respiratory system	الجهاز التنفسى	kidney	الكلية	building unit	وحدة بناء
breathing	التنفس	organs	أعضاء	stomach	المعدة
lungs	الرئتين				

4 Circulatory system

It carries out the transport function , where it distributes the digested food and oxygen gas all over the body cells.



5 Nervous system

It gives us the ability to feel, see, hear, smell and taste.



6 Reproductive system

It produces new individuals, who look like us.



Exercise

Complete :

1. Among characteristics of living organisms .... , ... and ....

2. The system responsible for digestion and absorption the food is the ....

3. .... helps the body to get rid of harmful substances.

4. .... system distributes the digested food and oxygen all over the body cells.

Answer

1. motion - nutrition - sensation. *2. digestive system.*

3. The urinary system *4. Circulatory.*

circulatory system	الجهاز الدورى	transport	النقل	distribute	يوزع
nervous system	الجهاز العصبى	ability	قدرة	reproductive system	الجهاز التناسلى
individuals	أفراد	absorption	الإمتصاص	look like	يشبه

LESSON 1

Now, let's study the digestive system.



Human digestive system

To benefit from complex food (as rice, bread, jam, ...), it must pass through special organs in the digestive system in a process called **digestion process** to be more simple.

Digestion process :

It is a process of changing (breaking down) food from a complex form into simple substances to let the body benefits from them.

The structure of the digestive system

Most of organs of the digestive system lie in the abdominal cavity.

The digestive system is made up of

The Digestive Canal

It consists of :

1. Mouth
2. Pharynx
3. Esophagus
4. Stomach
5. Small intestine
6. Large intestine

The Digestive Canal Supplementaries

It consists of :

1. Salivary glands
2. Liver
3. Pancreas

NOTES

- Digestive canal is made up of a group of organs in the shape of a long pipe (duct) with length 9 - 10 metres.
- Digestive canal starts with mouth opening and ends with anus opening.

abdominal cavity	التجويف البطنى	large intestine	الأمعاء الغليظة	long pipe	أنبوبة كبيرة
pharynx	البلعوم	pancreas	البنكرياس	complex	مُعقد
small intestine	الأمعاء الدقيقة	anus	فتحة الشرج	benefit	يستفيد
liver	الكبد	supplementaries	مُلحقات	breaking down	انحلال / تحليل
digestive canal	القناة الهضمية	salivary glands	الغُدد اللعابية	digestion	الهضم
esophagus	المرئ	lie in	توجد / تقع فى		

THE HUMAN DIGESTIVE SYSTEM

The Digestive Canal

1. Mouth
2. Pharynx
3. Esophagus
4. Stomach
5. Small intestine
6. Large intestine
   - Rectum
   - Anus

The Digestive Canal Supplementaries

1. Salivary glands
2. Liver
3. Pancreas

rectum المستقيم

LESSON 1

The digestion process occurs in different organs of the digestive system.



1 Mouth

It is a cavity, in which teeth and tongue are existed and salivary glands are opened.

A Teeth

- The number of teeth is **32** in adults.
- They are existed in two jaws (upper and lower). Each one has 16 teeth divided into 4 incisors, 2 canines and 10 molars.

Molars

- There are **ten** molars in each jaw (4 premolars and 6 molars).

Function :

- They grind food to make its swallowing easy.

Incisors

- There are **four** incisors in each jaw.

Function :

- They cut and tear food into small pieces.

Canines

- There are **two** canines in each jaw.

Function :

- They cut and tear food into small pieces.



incisors	قواطع	tongue	اللسان	tear	يمزق / يقطع
premolars	ضروس أمامية	jaw	فك	molars	ضروس
swallowing	بلع	canines	أنياب	grind	يطحن

B Tongue

Its functions :

1. It mixes food with saliva to help in food swallowing.
2. It turns food inside the mouth cavity.
3. It is responsible for tasting food.

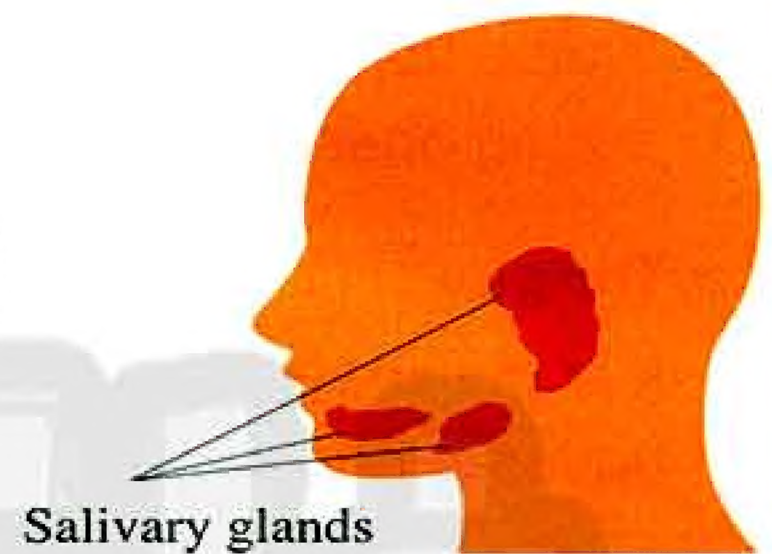


C Salivary glands

- There are three pairs of salivary glands.
- **Their function :**

They secrete saliva liquid that contains digestive enzymes that change (digest) starch into simple substances called sugar.

Starch → **By saliva** → **Sugar**



Digestive enzymes:

They are digestive substances that digest food and convert it into simple substances.

Generally, the function of the mouth in digestion is :

1. Cutting and grinding food with the teeth.
2. Digestion of starch into sugar.

Question

Complete the following sentences :

1. Salivary glands secrete .... in the ....
2. The human digestive system consists of two main parts which are .... and ....



Try to answer Worksheet 1 in the Notebook.

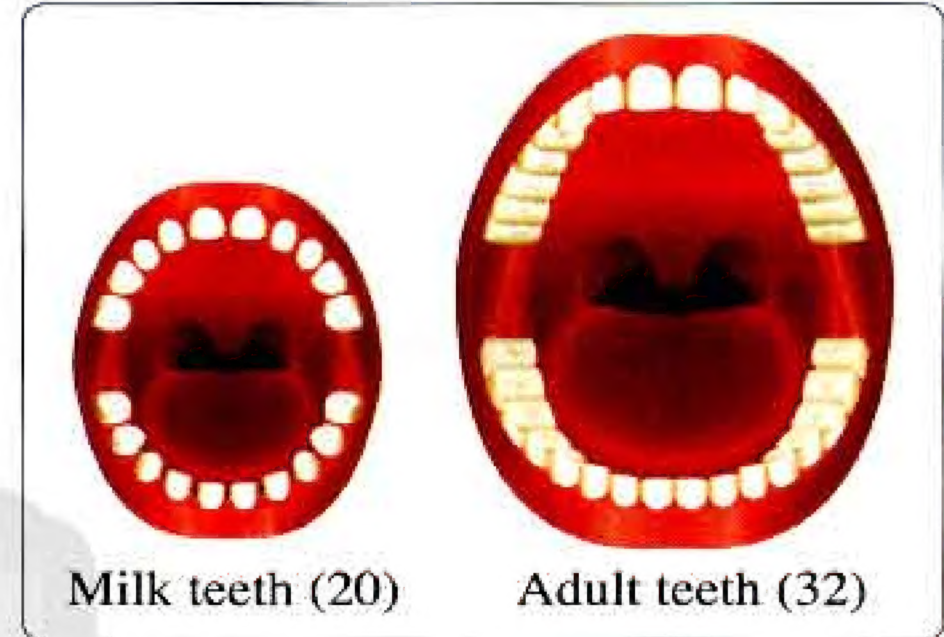
tasting	تذوق	responsible for	مسئول عن	mix	يخلط
enzymes	إنزيمات	starch	نشا	digestive substances	مواد هاضمة
saliva	اللعاب / الريق	secrete	يفرز	pairs	أزواج

LESSON 1



Read and learn

- **Milk teeth :**
  - They are weak teeth formed through the childhood phase and their number is 20 teeth, where each jaw have ten teeth.
  - They are divided into 4 **incisors**, 2 **canines** and 4 **molars**.
  - These teeth are completely replaced by strong ones before the age of twelve.



Milk teeth (20) Adult teeth (32)

- **Tongue :**

It is the speech organ as it changes the sound coming from larynx into understandable words.

- **Mumps :**

It is a viral disease that infects the pair of salivary glands located beneath the ears causing the inflammation of this pair.

Exercise

Write the scientific term :

1. *The system that gives us the ability to feel, see, hear, smell and taste.*
2. *Teeth are necessary in cutting and tearing food into small pieces.*
3. *Digestive substances that digest food and convert it into simple substances.*
4. *The organ that is responsible for tasting food.*

Answer

1. *Nervous system.*
2. *Incisors and canines.*
3. *Digestive enzymes.*
4. *Tongue.*

milk teeth	أسنان لبنية	inflammation	إلتهاب	viral disease	مرض فيروسى
speech organ	عضو التحدث	childhood phase	مرحلة الطفولة	larynx	الحنجرة
mumps	إلتهاب الغدة النكافية	understandable	مفهومة	beneath	أسفل

After the mouth, food passes to :





2 Pharynx

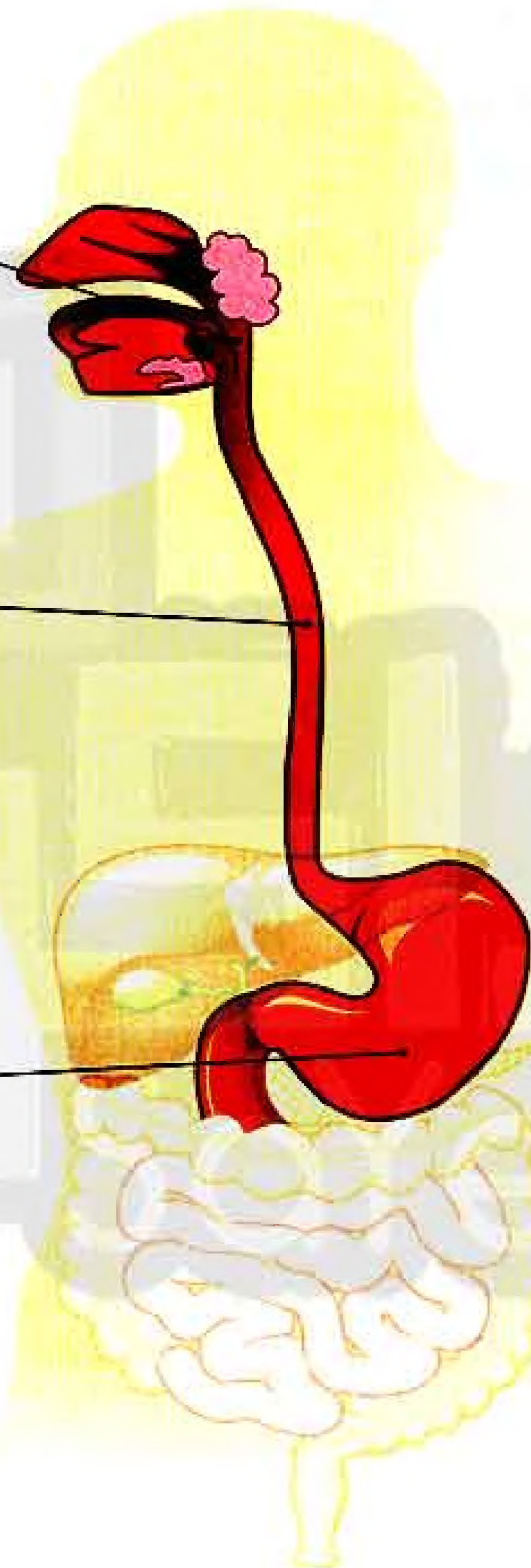
It is a common cavity leads to esophagus (in the digestive system) and trachea (in the respiratory system).

3 Esophagus

- It is a muscular tube connecting to stomach.
- **Its function :**
  It allows food to pass from pharynx to stomach.

4 Stomach

- It is a sac-like muscular organ.
- **Its function :**
  It secretes gastric (digestive) juice that makes incomplete (partially) digestion of proteins as it changes protein into a semi-liquid substance after few hours to be digested easily.



muscular tube	أنبوبة عضلية	partially digestion	هضم جزئى
gastric juice	العصارة المَعِدية	semi-liquid	شبه سائل
sac	كيس		

LESSON 1

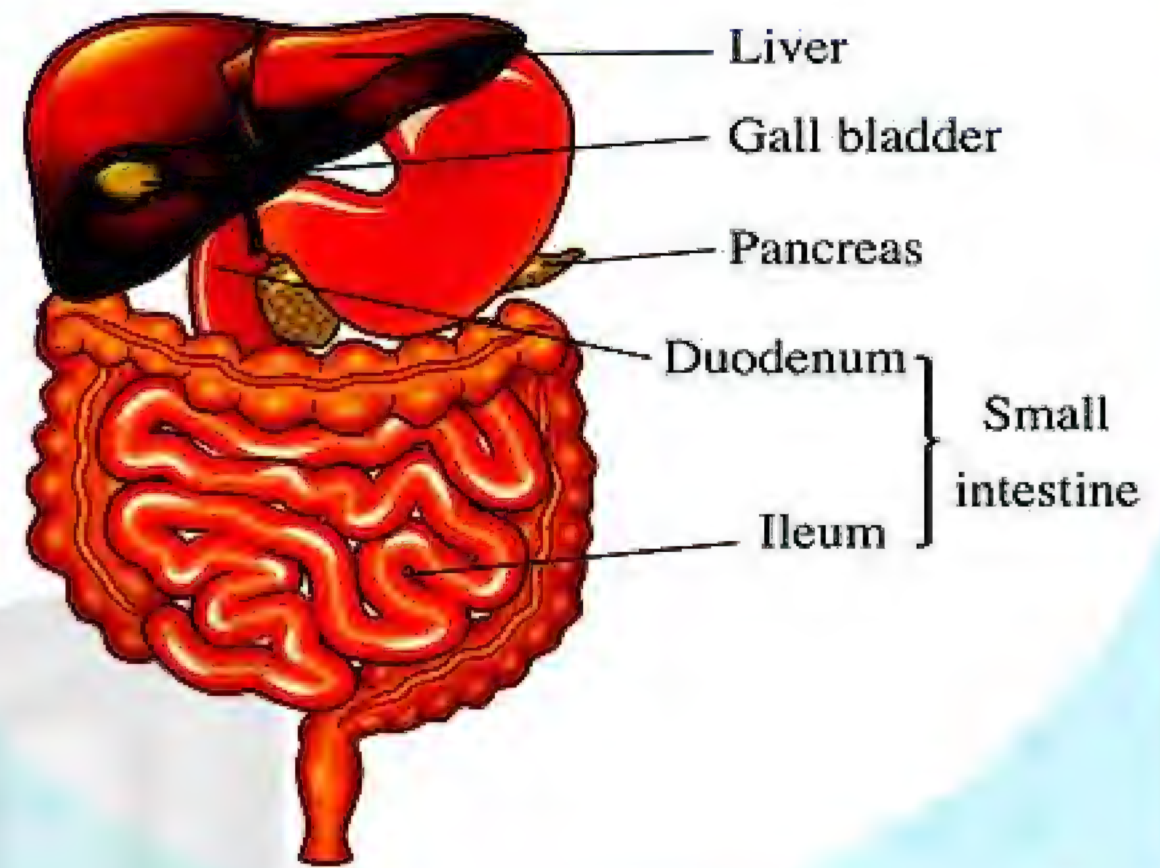
5 Small intestine

- It is the longest part of the digestive system as its length is about seven metres.

So, it coils inside the abdominal cavity.

- It consists of two parts:

A. The first part is duodenum.
B. The second part is ileum.



A Duodenum

- It is the first part of the small intestine, in which pancreatic juice and bile juice are poured.

,Where

- Pancreatic juice is secreted by pancreas.
- Bile juice is secreted by liver.

- **Function of bile juice :**
Bile juice helps in digestion of fats as it changes fats into fatty emulsion.

B Ileum

- It is the second part of the small intestine in which intestinal juice is poured.
- In the ileum :
  1. The digestion of different types of food is completed.
  2. The digested food is absorbed.

Generally, the function of small intestine in digestion are :

1. Completing the digestion of different types of food.
2. Absorption of the digested food.

intestinal juice	العصارة المعوية	bile juice	العصارة الصفراوية	ileum	اللفائفى (الجزء الأخير من الأمعاء الدقيقة)
coil	يلتف	pancreatic juice	العصارة البنكرياسية	poured	تنسكب
duodenum	الإثنى عشر	fatty emulsion	مستحلب دهنى		



Activity: To prove that bile juice helps in the digestion of fats.



Tools: Test tube - food oil - water - bird's bile juice.

Steps	Figures	Observations
1. Put an amount of food oil in a test tube containing water, then shake it well as in fig. (a).	Food oil Water Fig. (a)	- Oil and water don't mix.
2. Add some drops of bile juice from any bird as hen to the previous tube, then shake well as in fig. (b).	Bile juice Fatty emulsion Fig. (b)	- Bile juice makes oil and water mix together forming fatty emulsion.



Conclusion:

Bile juice breaks down fats (oil) into small particles that dissolve in water forming fatty emulsion.

Question

Complete the following sentences :

1. .... helps in digestion of fats, while .... helps in digestion of protein.
2. Gastric juice is secreted by .... , while pancreatic juice is secreted by ....

So, *in the digestive system, food undergoes two processes, which are digestion and absorption.*

dissolve يذوب   undergoes يخضع لـ   shake يرج

LESSON 1

Absorption process

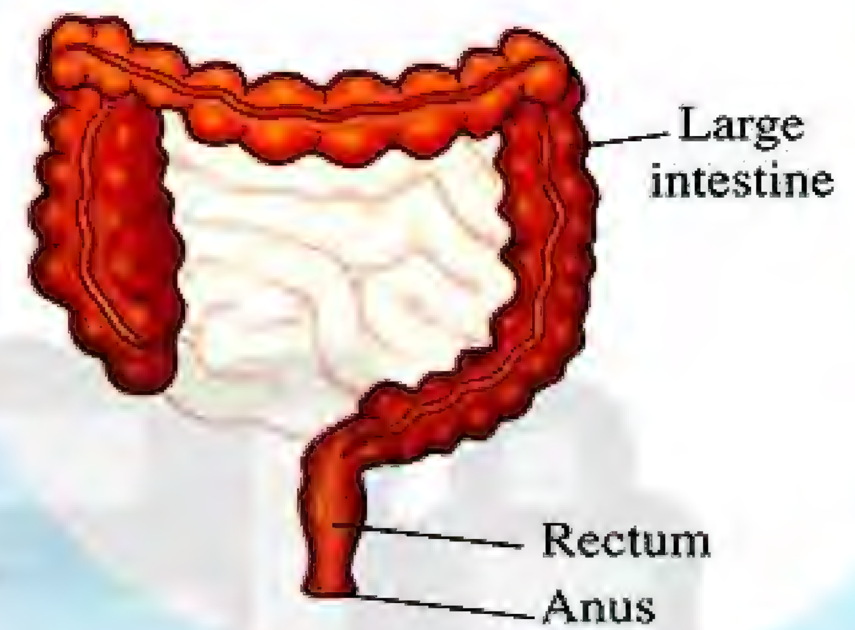
- It occurs in the small intestine specially in ileum.

Where,

- The digested food is absorbed through small nipples called villi.
- Villi extend from the inside of the small intestinal wall.
- The absorbed food reaches blood, that distributes the digested food all over the body organs.

6 Large intestine

- It is a tube that starts from the end of the small intestine and ends with the anus. (Anus is located at the end of the rectum).



- **The function of rectum :**
It absorbs the water from the food remains (wastes).
- **The function of large intestine :**
It stores wastes (food remains), then ejects them outside the body through anus.



Read and learn

- Digestion process needs a great amount of water, because it helps in breaking down complex food into simple substances.

- **Importance of food :**



Vitamins

Vitamins protect us from some diseases.



Proteins

Protein helps the body to grow and it is responsible for healing wounds.



Carbohydrates

Carbohydrates and fats supply the body with energy.

small nipples حلمات صغيرة food remains بقايا الطعام healing wounds إلتئام الجروح supply يمد

How can you keep the digestive system healthy ?

1. Chew the food well.



2. Don't eat much food that contains large amounts of fats as fast meals.



3. Avoid having food that contains flavour additives.



4. Don't buy food from street sellers. G.R.
To avoid the infectious diseases.



5. Practice sports regularly.





Try to answer
Worksheet 2
in the Notebook.

flavour additives	مكسبات طعم	street sellers	الباعة الجائلين	fast meals	الوجبات السريعة
infectious diseases	أمراض معدية	chew	يمضغ	keep	يحافظ
practice	ممارسة	regularly	بانتظام		

LESSON 1

Exercise

Choose the correct answer :

1. Digestion of starch starts by ....

a. gastric juice. *b. intestinal juice.* *c. saliva.* *d. bile juice.*

2. Digestion of proteins starts in ....

a. mouth. *b. esophagus.* *c. small intestine.* *d. stomach.*

3. Digestion of fats occurs in ....

a. mouth. *b. duodenum.* *c. stomach.* *d. (a) and (b).*

Answer

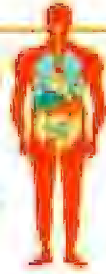
1. c. saliva.

2. d. stomach.

3. b. duodenum.

Remember





The Body consists of

consists of

Systems —each system consists of→ **Organs** —each organ consists of→ **Tissues** —each tissue consists of similar→ **Cells**

The digestive system consists of **digestive canal** and **digestive canal supplementaires**.

The journey of food in the digestive system is :

1. Mouth, where saliva changes starch into sugar.
2. Pharynx.
3. Esophagus.
4. Stomach, where gastric juice makes incomplete digestion of protein.
5. Small intestine, where
   - Complete digestion of food occurs by :
     - Bile juice that digests fats.
     - Pancreatic juice.
     - Intestinal juice.
   - Absorption of digested food occurs.
6. Large intestine, where it gets rid of wastes.

Questions on lesson one



Questions signed by 📖 have been taken from the school book.

1. Choose the correct answer:

1. All the following are from the properties of living organisms except ....
   a. motion. b. sensation. c. nutrition. d. magnetism.
2. The .... system distributes the digested food and oxygen gas all over the body cells.
   a. respiratory b. circulatory c. urinary d. nervous
3. The function of the nervous system is ....
   a. digestion. b. sensation. c. excretion. d. respiration.
4. .... system is responsible for the production of new individuals.
   a. Reproductive b. Nervous c. Urinary d. Digestive
5. The following organs belong to the digestive canal except ....
   a. stomach. b. esophagus. c. liver. d. small intestine.
6. 📖 The stomach belongs to the .... system.
   a. digestive b. reproductive c. urinary d. nervous
7. .... is a cavity in which teeth and tongue are existed and salivary glands are opened.
   a. Pharynx b. Mouth c. Esophagus d. Stomach
8. In each jaw, teeth in adults are divided into ....
   a. three incisors, two canines and six molars.
   b. four incisors and ten molars.
   c. ten molars and two canines.
   d. four incisors, two canines and ten molars.
9. Cutting and tearing food into small pieces is the function of ....
   a. molars. b. incisors and canines.
   c. salivary glands. d. tongue.
10. The organ that turns food inside the mouth cavity and mixes it up with saliva is the ....
   a. esophagus. b. teeth. c. tongue. d. pharynx.

11. 📖 Digestion of starch starts by the ....
a. gastric juice.
b. intestinal juice.
c. saliva.
d. bile juice.

12. .... is a cavity, that extends from the mouth to esophagus.
a. Stomach
b. Large intestine
c. Pharynx
d. Small intestine

13. .... allows food to pass from pharynx to stomach.
a. Mouth
b. Esophagus
c. Small intestine
d. Large intestine

14. .... secretes gastric juice that changes protein into a semi-liquid substance.
a. Large intestine
b. Small intestine
c. Stomach
d. Mouth

15. Digestion of proteins starts in ....
a. mouth.
b. esophagus.
c. small intestine.
d. stomach.

16. The length of the small intestine is about ....
a. seven metres.
b. three metres.
c. four metres.
d. ten metres.

17. The first part of small intestine is called ....
a. pharynx.
b. duodenum.
c. stomach.
d. ileum.

18. Bile juice is secreted by ....
a. liver.
b. salivary glands.
c. pancreas.
d. stomach.

19. Digestion of fats occurs in ....
a. mouth.
b. duodenum.
c. stomach.
d. (a) and (b).

20. .... changes fats into fatty emulsion.
a. Bile juice
b. Pancreatic juice
c. Gastric juice
d. Saliva

21. In the digestive system, the stomach is followed by ....
a. esophagus.
b. duodenum.
c. ileum.
d. large intestine.

22. 📖 Digested food is absorbed in the ....
a. esophagus.
b. stomach.
c. small intestine.
d. large intestine.

23. .... absorbs the water from the food remains.
a. Rectum
b. Anus
c. Ileum
d. Duodenum

24. The undigested food is assembled in (goes to) the ....
   a. stomach. b. small intestine. c. large intestine. d. duodenum.

25. The following pieces of advice keep the digestive system healthy except ....
   a. eating much food that contains large amounts of fats.
   b. avoid eating food that contains food additives.
   c. practice sports regularly.
   d. chew food well.

2. Put (✓) in front of the right statement and (✗) in front of the wrong one, then correct it :

1. All living organisms have common properties as sensation, reproduction, motion, respiration and nutrition. ( )
2. The digestive system consists of a group of organs. ( )
3. Mouth, esophagus, pharynx and liver are from the organs of the digestive canal. ( )
4. Salivary glands, liver and pancreas are connected to the digestive canal. ( )
5. The length of the digestive canal is about 10 – 15 metres. ( )
6. Human teeth are divided into three incisors and twenty molars. ( )
7. There are three pairs of salivary glands that secrete saliva. ( )
8. Digestion of starch and converting it into sugar takes place by the effect of digestive enzymes in saliva. ( )
9. Small intestine is a muscular tube that allows food to pass from pharynx to stomach. ( )
10. The incomplete digestion of proteins occurs in esophagus. ( )
11. Digestion of proteins occurs by the effect of gastric juice, while the digestion of fats occurs by the effect of bile juice. ( )
12. Digested food is absorbed in the stomach. ( )
13. Complete digestion of food occurs in small intestine, but incomplete digestion of proteins occurs in stomach. ( )
14. Gastric juice digests fats. ( )

15. 📖 Saliva digests proteins. ( )
16. 📖 Bile juice helps in the digestion of fats. ( )
17. Undigested food is assembled (stored) in the large intestine. ( )

3. Correct the underlined words:

1. Salivary glands secrete a fluid containing digestive substances for fats. (................)
2. Gastric juice helps in digestion of fats. (................)
3. Large intestine consists of two main parts which are duodenum and ileum. (................)
4. Large intestine ends with ileum. (................)
5. Digestive canal supplementaries include salivary glands, liver and pharynx. (................)
6. Large intestine secretes the intestinal juice. (................)
7. Absorption of food occurs in stomach. (................)
8. A complete digestion of protein substances occurs in stomach. (................)

4. Write the scientific term of each of the following :

1. The system that digests and absorbs food. (................)
2. The system that carries out the respiration process. (................)
3. The system that helps the body getting rid of harmful substances. (................)
4. It gives us the ability to feel, see, hear, smell and taste. (................)
5. The system that carries out the transport function in the human body. (................)
6. The system which makes us produce new individuals who look like us. (................)
7. The process of changing food from a complex form into a simple one to let the body gets benefit from it. (................)
8. The system that consists of the digestive canal and the digestive canal supplementaries. (................)

9. A group of organs in the shape of long pipe with length of 9 - 10 metres. (..................)
10. A cavity in which teeth and tongue are existed and salivary glands are opened. (..................)
11. The teeth that cut and tear food into small pieces. (..................)
12. The teeth that grind food to make its swallowing easy. (..................)
13. The organ that mixes food with saliva. (..................)
14. The type of glands that exists in three pairs and secretes saliva. (..................)
15. The liquid that is secreted in the mouth and helps in the digestion of starch. (..................)
16. They are digestive substances that digest food and convert it into simple substances. (..................)
17. It is a common cavity leads to esophagus and trachea. (..................)
18. The muscular tube allows food to pass from pharynx to stomach. (..................)
19. The sac-like muscular organ that secretes gastric juice. (..................)
20. The organ that is responsible for incomplete digestion of proteins. (..................)
21. The juice that is secreted by stomach. (..................)
22. The organ that secretes the pancreatic juice. (..................)
23. The juice helps in digestion of fats, where it changes fats into fatty emulsion. (..................)
24. A part of the small intestine, where the digested food is absorbed. (..................)
25. The organ in which the complete digestion of food occurs. (..................)
26. The organ starts from the end of the small intestine and ends with the anus. (..................)
27. The organ that secretes bile juice. (..................)
28. The juice that is secreted from the liver and affects fats digestion. (..................)

5. Complete the following statements:

1. .... , ... , respiration, excretion and sensation are from the common properties of living organisms.
2. The living organism's body is made up of systems integrated with each other, and each system is made up of .... that consist of .... , where each of them consist of .... that each of them has its own function.
3. .... is the building unit of the human body.
4. .... system digests and absorbs food.
5. Carrying out the process of breathing is the function of .... system.
6. .... system helps the body to get rid of the harmful substances.
7. The system that is responsible for production of new individuals is ....
8. The .... process is the breaking down of food substances to get benefit from them.
9. The digestive system consists of two main parts which are .... and ....
10. Mouth, ..., esophagus, ..., small intestine and large intestine are the components of the digestive canal.
11. The digestive canal supplementaries are salivary glands , ... and ....
12. The main organs of the digestive system lie in .... cavity.
13. The length of the digestive canal is about .... metres.
14. The digestive canal starts with .... and ends with ....
15. The total number of teeth in an adult is .... in each jaw.
16. Starch digestion starts in ....
17. Salivary glands are .... pairs and secrete a liquid known as ....
18. .... are digestive substances that digest food and convert it into simple substances.
19. .... is a muscular tube that allows food to pass from pharynx to stomach.
20. .... is a sac-like muscular organ.
21. The protein digestion starts in ....
22. The stomach secretes .... juice which digests .... substances.

LESSON 1

23. Proteins are digested in .... and ....
24. .... and .... are examples of the digestive juices in the human body.
25. Fats digestion starts in ....
26. The longest part of the digestive system is ....
27. The small intestine consists of two parts which are .... and ....
28. .... is the first part of the small intestine, where bile juice and pancreatic juice are poured.
29. Digestion of different types of food is completed in ....
30. .... is secreted by pancreas, while .... is secreted by liver.
31. Bile juice helps in digestion of .... into ....
32. Absorption of digested food occurs in .... , then it is moved to ....
33. The food undergoes two processes in the digestive system which are .... and ....

6. Give reasons for the following:

1. All body systems are working in full harmony.
....
2. Food must be digested into simple substances.
....
3. Digestion process is very important.
....
....
4. Salivary glands secrete saliva inside the mouth cavity.
....
5. Teeth are formed of incisors, canines and molars.
....
6. Molars make food swallowing easy.
....
7. The stomach cannot digest food completely.
....
....
8. Bile juice is very important.
....

9. Liver helps in the digestion of fats.

....

10. Starch is not digested in the stomach.

....

....

11. You cannot live without the small intestine.

....

....

12. Absorption of food does not take place in the stomach.

....

13. You must not eat fast meals.

....

14. Fats are digested in the small intestine (duodenum).

....

....

15. Proteins are digested in the stomach and small intestine.

....

....

7. What happens if ... ?

1. Salivary glands stop secreting saliva.

....

2. Tongue is not found in the mouth.

....

3. Liver stops secreting bile juice.

....

4. Adding the bile juice of chicken to a mixture of cooking oil and water, then shaking them.

....

5. Stomach doesn't secrete gastric juice.

....

6. The small intestine is removed from the human body.

....

....

LESSON 1

8. What is meant by ... ?

1. Digestion process.

....

....

2. Digestive enzymes.

....

....

9. Mention one function of each of the following :

1. The digestive system.

....

2. The nervous system.

....

3. The urinary system.

....

4. Mouth.

....

5. Tongue.

....

6. Saliva.

....

7. Stomach.

....

8. Liver.

....

9. Bile juice.

....

10. Small intestine.

....

11. Large intestine.

....

12. Salivary glands.

....

10. **Relate the following organs to the human body systems.**

(Heart – Stomach – Trachea – Kidney – Brain)

....

....

....

11. **State the type of juices secreted by the following glands (salivary glands – liver).**

....

....

12. **What are the pieces of advice that you should give to your classmates to keep their digestive system healthy ?**

....

....

....

13. **The opposite figure represents a part of the digestive system:**

1. Complete the labels on the figure.

ⓐ .... ⓑ ....

ⓒ .... ⓓ ....



2. What is the importance of organ no. (b) ?

....

3. What would happen when organ no. (a) is infected by a disease ?

....

14. **Compare between bile juice and pancreatic juice.**

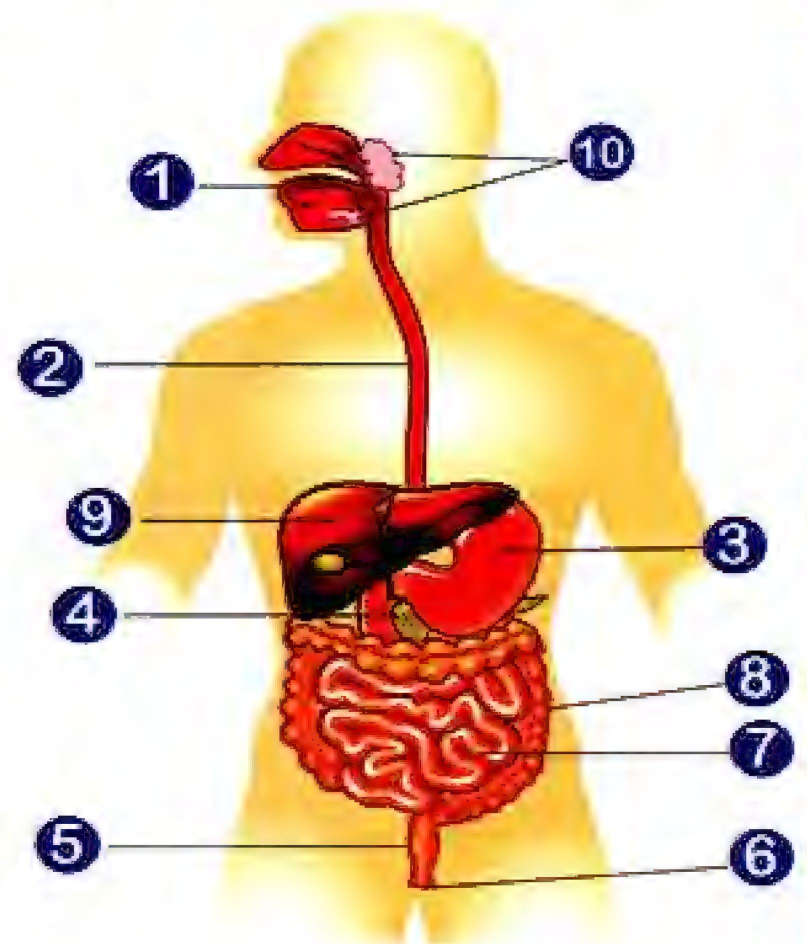
....

....

....

15. Look at the opposite figure of the human digestive system, then answer:

(A) Name the organs on the figure from 1 to 10.



1 .... 2 ....
3 .... 4 ....
5 .... 6 ....
7 .... 8 ....
9 .... 10 ....

(B) Mention the number of the organs which have these functions :

1. Contains gastric juice. (..................)
2. Produces bile juice. (..................)
3. Joins the pharynx with stomach. (..................)
4. Digestion of starch occurs in it. (..................)
5. Secretes saliva. (..................)

(C) What is the benefit of the organ no. (8) ?

....

(D) What is the number of the organ that absorbs the digested food ?

....

(E) What is the relation between the organ no. (9) and digestion of fats ?

....

Timss Questions



1. Positioning the following organs or systems in front of the following functions :
(Reproductive system - Canines - Stomach - Urinary system - Ileum).

a. Their number in each jaw is two and they cut and tear food into small pieces. (..................)

b. It helps the body to get rid of harmful substances. (..................)

c. It produces new individuals who look like us. (..................)

d. It changes protein into a semi-liquid substance to be digested easily. (..................)

e. Absorption of the digested food. (..................)

2. What are these food types digested into ?

a. Proteins : ....

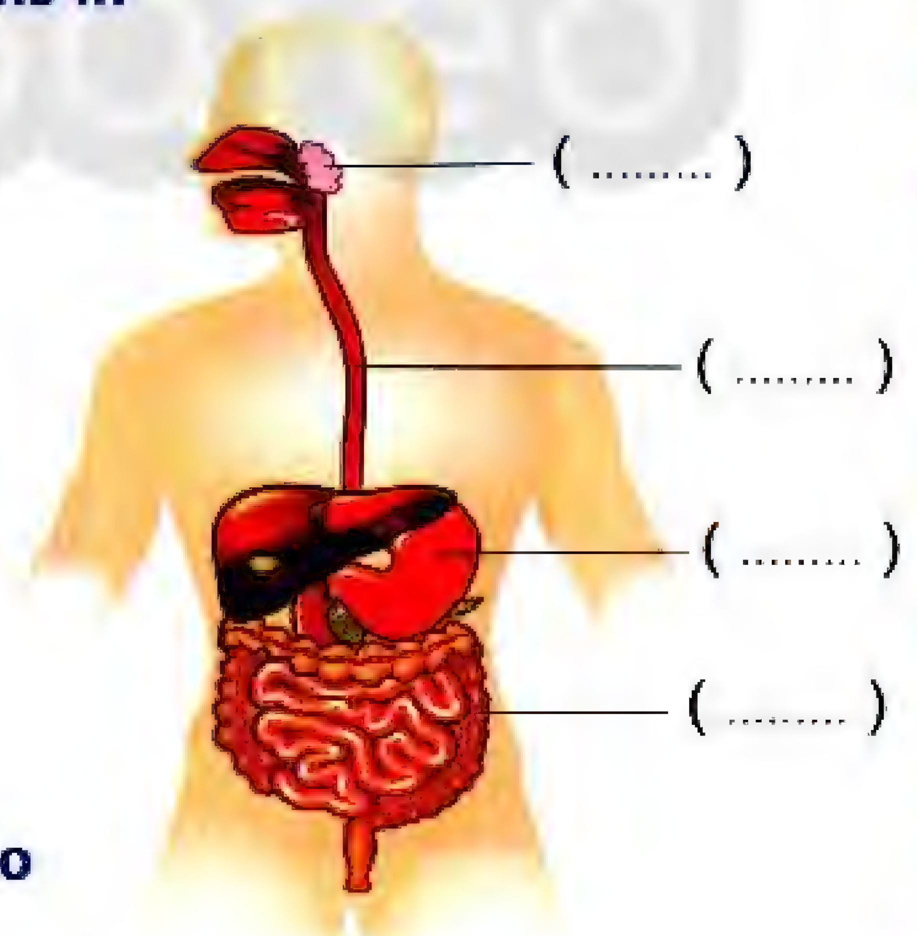
b. Fats : ....

c. Starch : ....

3. Look at the opposite diagram, then answer the following questions :

a. Write the answers of the following questions in the form of labels on the diagram.

1. The organ that allows food to pass from pharynx to stomach.
2. The sac-like muscular organ.
3. The organ that digests starch and changes it into sugar.
4. It stores the food remains, then ejects them outside the body through anus.



b. Which of the following parts is not related to the digestive system ?
Stomach - Urinary bladder - Small intestine - Pancreas - Liver - Esophagus. (..................)

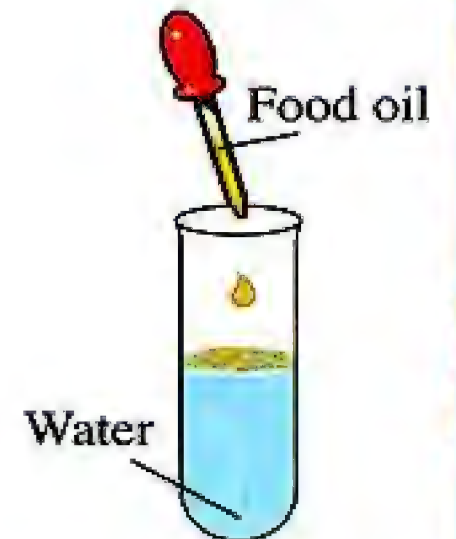
LESSON 1

4. **Look at the opposite figure, then answer the following questions :**

a. **What will happen after the addition of food oil to the water ?**

....

....



b. **What will happen if we add bile juice to the figure in front of you ? Why ?**

....

....

5. **Mention the organ which secretes :**

1. Saliva liquid. (..................)
2. Bile juice. (..................)
3. Pancreatic juice. (..................)
4. Intestinal juice. (..................)
5. Gasteric juice. (..................)



2 LESSON

Human respiratory system

Why does any living organism respire ?

Any living organism respires to get oxygen which is necessary to burn the digested food to get the needed energy for all the body activities.



Respiration process :

It is the process by which a human obtains (gets) energy from burning of the digested food.

The respiration process takes place in special organs forming the respiratory system.

In this lesson we will study:

First : The structure of the respiratory system.

Second : The respiration process.

Third : Mechanism of the respiration process.

Fourth : How can you keep the respiratory system healthy.

energy طاقة respiration التنفس obtain (get) يحصل على

LESSON 2

First The structure of the respiratory system

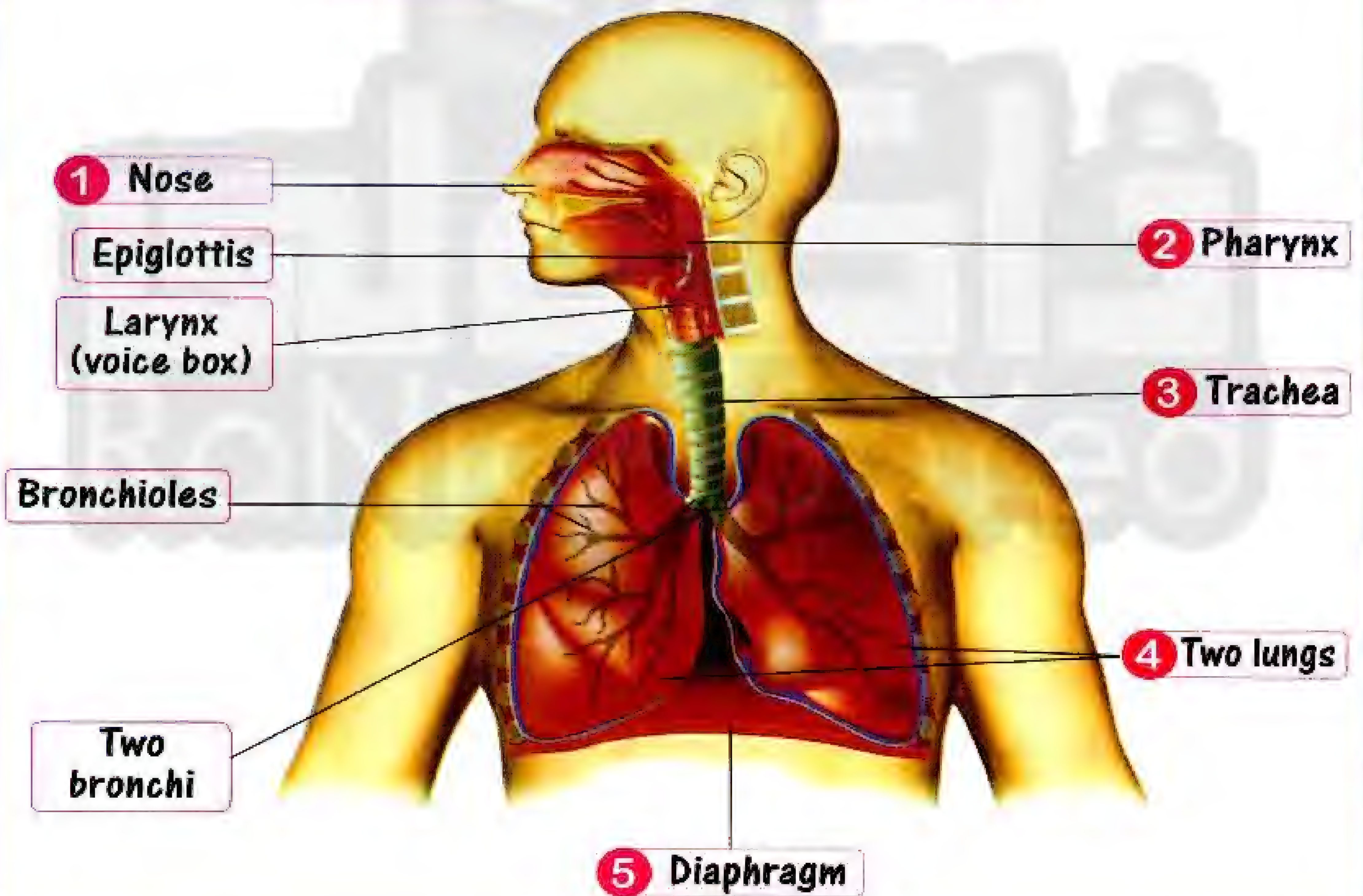


The organs of respiratory system exist in the thoracic (chest) cavity.

The human respiratory system consists of :

- Nose
- Pharynx
- Trachea
- Two bronchi
- Two lungs
- Diaphragm

THE HUMAN RESPIRATORY SYSTEM



bronchi	الشُعب الهوائية	diaphragm	الحجاب الحاجز	epiglottis	لسان المزمار
trachea	القصبة الهوائية	lungs	رئة	larynx	الحنجرة
thoracic (chest) cavity	التجويف الصدرى				

Now, Let's study the structure and functions of each organ of the respiratory system.

1 Nose

It is the first organ of the respiratory system through which the air enters the body.

Its functions:

1. **It is lined with a mucous layer and hair.** G.R.

   To filter the air from dust and microbes before entering the two lungs.

2. **It is lined with blood capillaries (tiny blood vessels).** G.R.

   To warm the air before entering the two lungs.

So, we should breathe through the nose not through the mouth.



2 Pharynx

It is a common cavity leads to the trachea and the esophagus.

Its function:

It is connected to the esophagus (in the digestive system) and the trachea (in the respiratory system).

Question

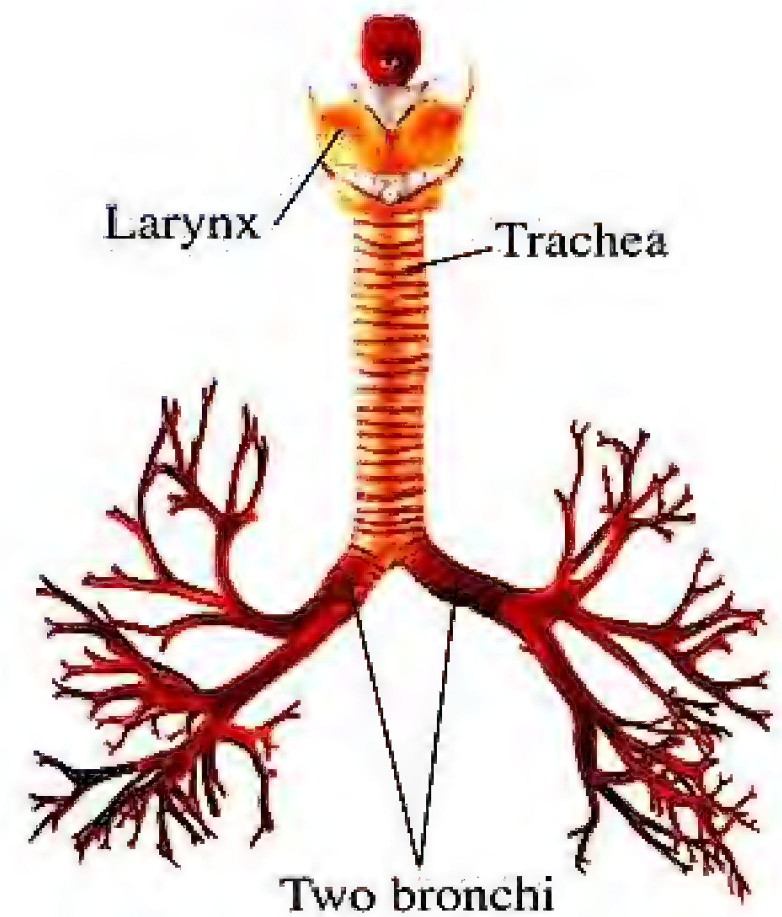
Complete the following sentences :

1. Nose is lined with .... , ... and ....
2. Pharynx is a common cavity between .... and ....

blood capillaries	شعيرات دموية	filter	يُرشح - ينقى	blood vessels	أوعية دموية
tiny	صغير جدًا	mucous layer	طبقة مخاطية	microbes	ميكروبات
lined with	مبطن بـ ...	dust	غبار		

LESSON 2

3 Trachea



It is a tube supported with incomplete cartilaginous rings.

⊙ **At its top, there are:**

- Larynx (voice box).
- Epiglottis.

- Function of epiglottis :

It closes the larynx (or trachea) during swallowing. G.R.

To prevent food from entering the trachea.

⊙ **At its end (bottom),**

It is branched into two narrow tubes called bronchi (s. bronchus) which enter the two lungs.

Functions of trachea :

1. **It has incomplete cartilaginous rings.** G.R.
   To keep it open all the time **or** to keep it permanently open.
2. **It is lined with cilia.** G.R.
   To eject up strange objects.

Exercise

Complete:

1. .... *is a common cavity between the digestive and respiratory systems.*
2. *At the top of trachea, there are* .... *and* ....
3. .... *closes the top of trachea during swallowing.*

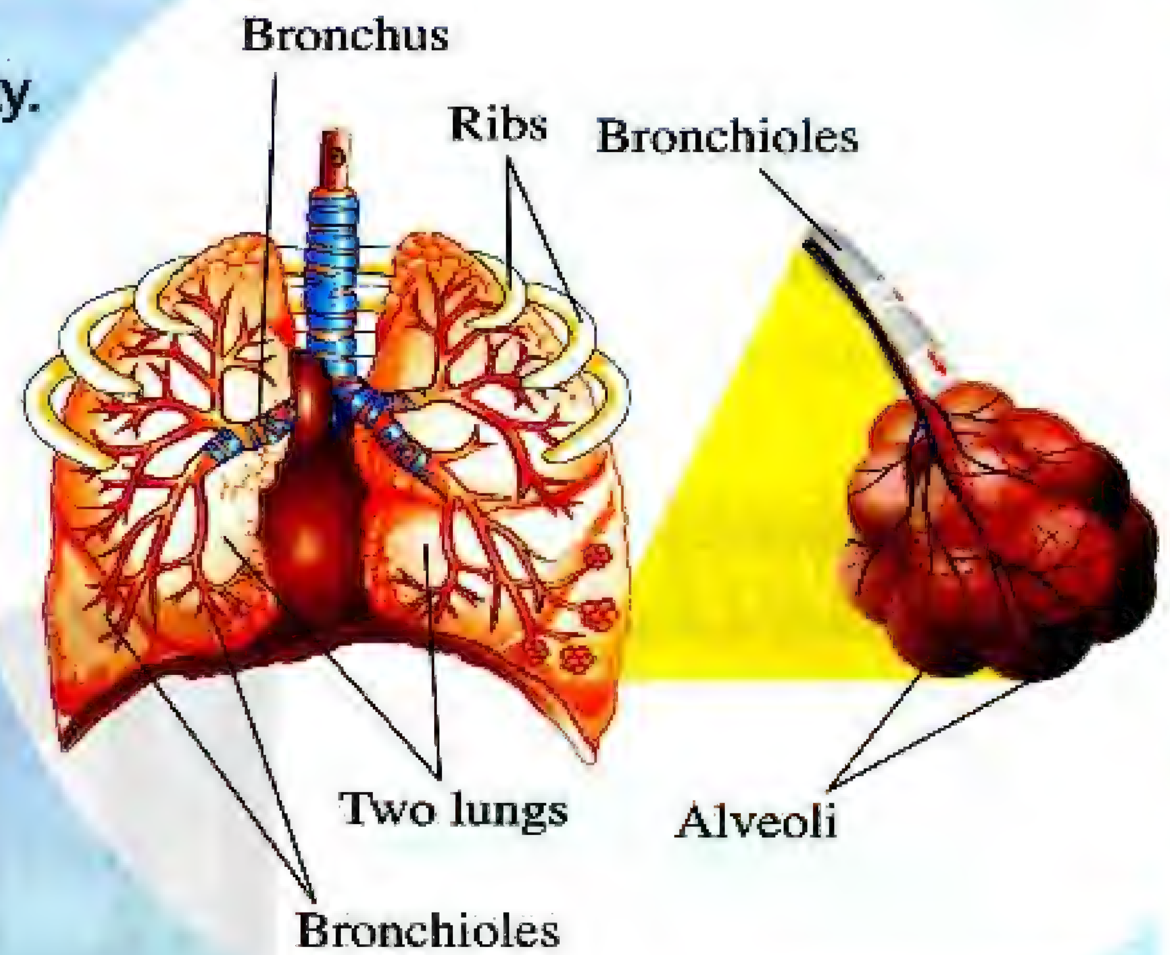
Answer

1. *Pharynx* 2. *larynx - epiglottis.* 3. *Epiglottis*

cartilaginous rings	حلقات غضروفية	eject up	يطرد لأعلى	cilia	أهداب
supported	مدعمة	permanently	دائمًا	strange	غريب

4 Two lungs

- They occupy the thoracic (chest) cavity.
- They are surrounded by ribs (rib cage).
- Each lung contains bronchus which is divided into bronchioles.
- Bronchioles end in tiny air sacs called alveoli (s. alveolus).



Alveoli:

They have thin walls and are surrounded by a network of blood capillaries, where the exchange of gases occurs.

Function of two lungs:

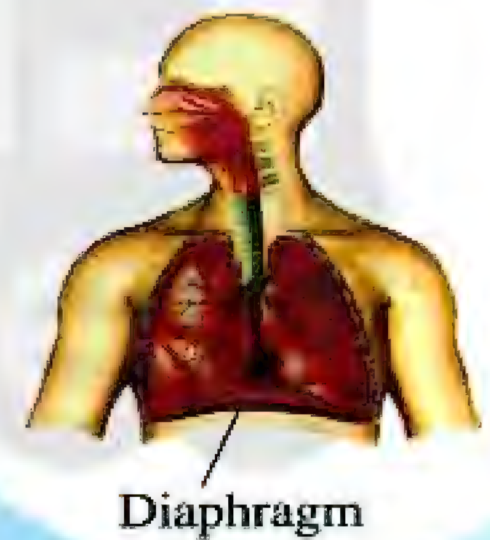
Gases exchange takes place in them specially in the alveoli.

5 Diaphragm

It is a muscle that separates the thoracic cavity from the abdominal cavity.

Function of diaphragm :

It has an important role in the respiration process (inhalation and exhalation processes).



Exercise

Complete the following sentences :

1. The diaphragm separates .... cavity from .... cavity.

2. The two lungs are surrounded by ....



Try to answer
Worksheet 3
in the Notebook.

occupy	يُشغَل	inhalation	الشهيق	exhalation	الزفير
air sacs	أكياس هوائية	ribs	ضلوع	rib cage	القفص الصدرى
exchange of gases	تبادل غازات	alveoli	حويصلات هوائية	network	شبكة
separate	يفصل	muscle	عضلة		

LESSON 2



Second The respiration process

- It is a process to get oxygen gas from the environment.
- It includes two processes which are :
  1. Inhalation process. 2. Exhalation process.
- It increases when your body becomes more active.

Activity 1 To prove that the respiration process increases when your body becomes more active.



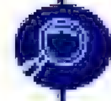
Step:

Record how many times of respiration your classmate does per minute by observing the motion of his chest during :


1. Sitting

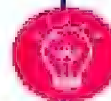

2. Walking


3. Running



Observations:

1. The motion of the chest is repeated in two steps :
   a. Upwards and this is the inhalation process.
   b. Downwards and this is the exhalation process.
2. The motion of the chest increases during walking and more increases during running.



Conclusions:

1. The respiration process includes two processes which are inhalation process and exhalation process.
2. When the body is more active, the number of respiration times increases. G.R.
   To obtain more energy needed for all the body activities.

upwards لأعلى environment البيئة downwards لأسفل

Third Mechanism of the respiration process



Activity 2 To show the mechanism of the respiration process.

Tools: A plastic bottle - two balloons - a rubber membrane.

Steps	Figures	Observations
1. Design a model of the two lungs and the chest cavity as shown. 2. Pull the rubber membrane (which represents the diaphragm) downwards as shown in figure (a).	 Fig.(a)	The air enters the two balloons, so the volume of the two balloons increases.
3. Release the rubber membrane to turn back to its original position as shown in figure (b)	Fig.(b)	The air moves outside the two balloons, so the volume of the two balloons turns back to its normal volume.



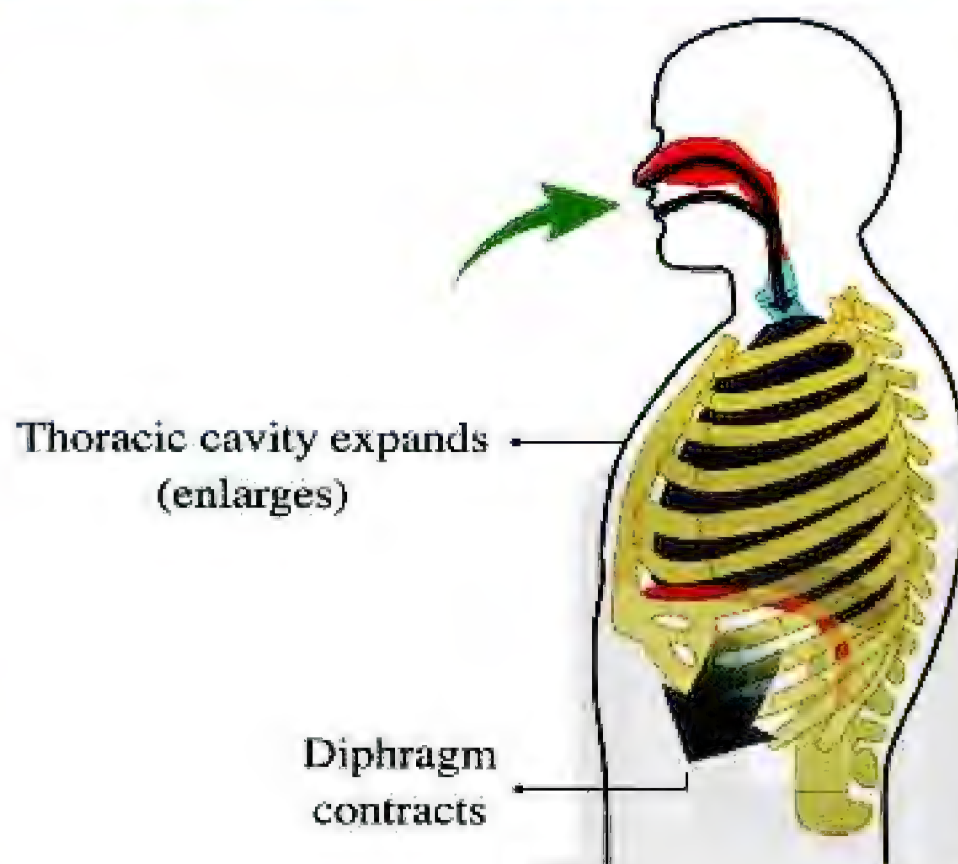
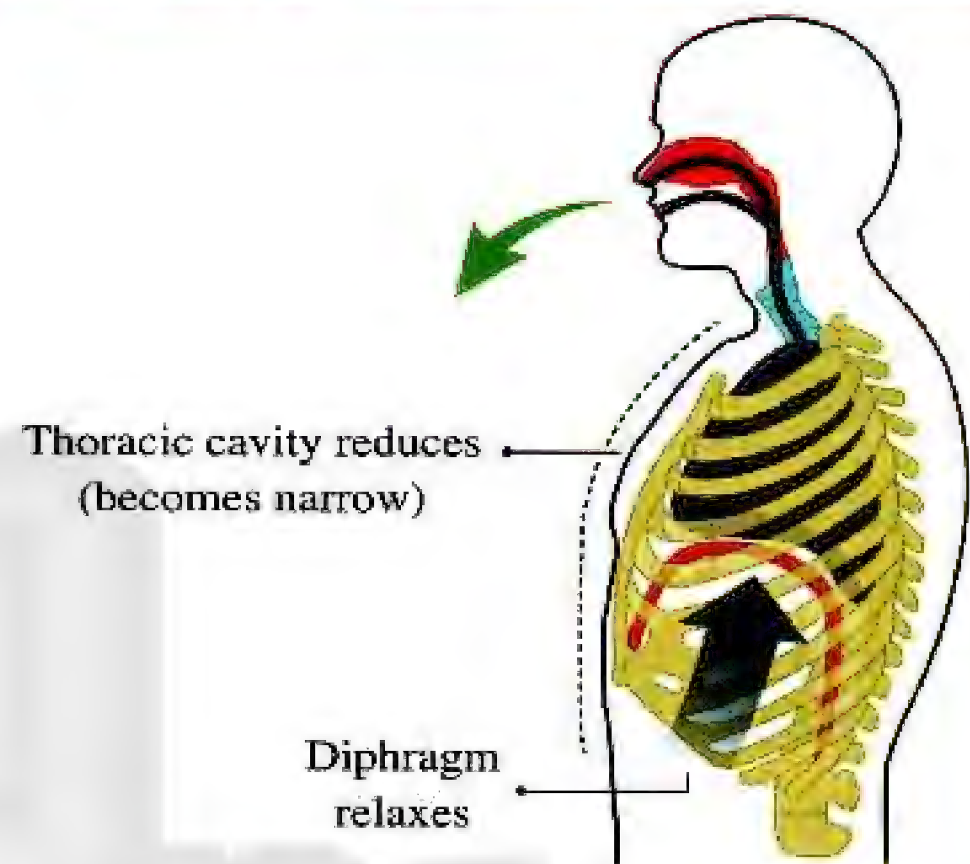


Conclusion:
The mechanism of the respiration process is represented by two processes which are inhalation and exhalation.

mechanism	آلية	rubber membrane	غشاء مطاطى	original position	الموضع الأصلى
model	نموذج	design	يصمم	turn back	يعود
pull	يسحب	represent	يمثل		

LESSON 2

Comparison between inhalation process and exhalation process :

The inhalation process	The exhalation process
	
Definition	
It is a process by which the air rich in oxygen gas enters the lungs through the nose (nasal cavity)	It is a process by which the air rich in carbon dioxide gas and water vapour is expelled out of the lungs through nose (nasal cavity).
The diaphragm muscle	
The diaphragm muscle contracts and moves down.	The diaphragm muscle relaxes and moves up.
The ribs	
The ribs move upwards.	The ribs move downwards.
Size of thoracic cavity	
The thoracic (chest) cavity enlarges and air rich in oxygen gas (inhaled air) enters the two lungs through the nose.	The thoracic cavity becomes narrow and air rich in carbon dioxide gas and water vapour (exhaled air) goes out from the two lungs through the nose.

relax	يرتخى	nasal cavity	تجويف الأنف	enlarge (expand)	يتسع
expelled out	يطرد	reduce (become narrow)	يقل (يصبح ضيق)	contract	ينكمش

So, *the exhaled air differs from the inhaled air, where the exhaled air contains :*

1. Carbon dioxide gas. 2. Water vapour.

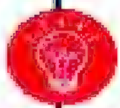




Activity 3

To prove that the exhaled air contains carbon dioxide gas.

Step	Figure	Observation
Blow in a test tube containing clear limewater using a juice straw for two minutes.		The clear limewater becomes turbid.



Conclusion:
The exhaled air contains carbon dioxide gas.



Activity 4

To prove that the exhaled air contains water vapour.

Step	Figure	Observation
Blow in front of a mirror or a glass sheet.		Condensation of water vapour on the mirror surface forming water droplets.



Conclusion:
The exhaled air contains water vapour.

condensation	التكاثف	blow	ينفخ	clear	نقي
limewater	ماء الجير	water droplets	قطرات الماء	juice straw	شفاط عصير
turbid	معكر				

LESSON 2

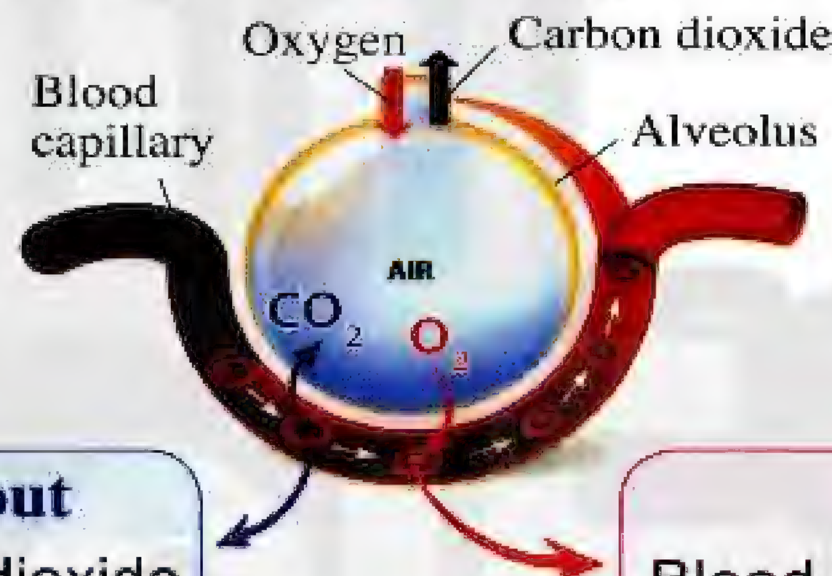
NOTES

- The clear limewater is used to detect the presence of **carbon dioxide gas**.
- In inhalation process, we take **oxygen gas**, but in exhalation process, we expel **carbon dioxide gas** and **water vapour**.

The exchange of gases during inhalation and exhalation processes :

The exchange of gases occurs between :

1. **The air existing in alveoli.**
2. **The blood in the blood capillaries through their thin walls.**



Carbon dioxide out

Blood leaves carbon dioxide gas (produced from the burning of food) to eject it out of the lungs during exhalation process.

Oxygen in

Blood carries oxygen gas (we get it during the inhalation process) and distributes it all over the body cells



Read and learn



- The inhalation (respiration) process through the mouth causes infection with many thoracic diseases.
- We inhale the atmospheric oxygen gas by the two lungs, whereas the fish inhale the dissolved oxygen in water by gills.
- Lungs are free from muscles, so they can't shrink or spread out alone.
- Lungs shrink or spread out by muscles between the ribs and the diaphragm muscle.

gills	خياشيم	shrink	ينكمش	spread out	يتمدد
detect	يكتشف	thoracic diseases	أمراض صدرية		

Fourth How can you keep the respiratory system healthy ?



1. Avoid being in crowded or poor ventilation places.



2. Keep off the severe cold.



3. Eat fruits rich in vitamin (C) such as orange and guava. G.R.
To protect yourself from cold.



4. Stop smoking or being a passive smoker. G.R.
Because it leads to cancer causing death.

G.R.
Eating orange and guava is important.
To provide us with vitamin "C" that is necessary to keep the respiratory system healthy.



Try to answer
Worksheets **4 & 5** in the Notebook.

poor ventilation	رديئ التهوية	severe	شديد	crowded	مُزدحم
keep off	يبتعد عن	passive smoker	شخص يستنشق الدخان	smoking	التدخين

LESSON 2

Exercise

Choose the correct answer :

1. *The two lungs are surrounded by ....*
   a. *diaphragm.* b. *ribs (rib cage).* c. *trachea.* d. *cillia.*
2. *Air enters the two lungs in the .... process.*
   a. *inhalation* b. *exhalation* c. *excretion* d. *digestion*
3. *The number of respiration times increases in .... case.*
   a. *sitting.* b. *running.* c. *sleeping.* d. *standing.*

Answer

1. b. *ribs (rib cage).*
2. a. *inhalation.*
3. b. *running.*

Remember



- The human respiratory system **consists of** :
  nose , pharynx , trachea , two bronchi , two lungs and diaphragm.
- The passage of oxygen gas during **inhalation is** :
  Nose → Pharynx → Larynx → Trachea → Bronchus → Alveoli → Blood.
- The passage of carbon dioxide gas during **exhalation is** :
  Blood → Alveoli → Bronchus → Trachea → Larynx → Pharynx → Nose.
- **Comparison between inhalation process and exhalation process :**

Points of comparison	Inhalation process	Exhalation process
1. Definition:	It is a process by which air enters the lungs.	It is a process by which air is expelled out of the lungs.
2. Diaphragm muscle:	It contracts and moves down.	It relaxes and moves up.
3. Movement of ribs:	They rise upwards.	They move downwards.
4. Size of thoracic cavity :	Increases.	Decreases.

- **Clear limewater** is used to test the presence of carbon dioxide, where limewater becomes turbid (milky) when carbon dioxide passes through it.
- **The exchange of gases** occurs between the air existing in alveoli and the blood in the blood capillaries.

Questions on lesson two



Questions signed by 📖 have been taken from the school book.

1. Choose the correct answer :

1. Burning the digested food inside the body cells requires ....
   a. carbon dioxide gas. b. oxygen gas.
   c. water vapour. d. (a) , (b) and (c).
2. Living organisms get the needed energy from the .... process.
   a. digestion b. respiration c. excretion d. absorption
3. All the following organs belong to the respiratory system except ....
   a. lungs. b. trachea. c. stomach. d. bronchi.
4. 📖 The .... is an organ in the human respiratory system.
   a. liver b. stomach c. lung d. pancreas
5. The organ which is responsible for warming air before entering the lungs is ....
   a. pharynx. b. nose. c. trachea. d. bronchi.
6. The organ which found in both of the respiratory and digestive systems is ....
   a. mouth. b. larynx. c. pharynx. d. lungs.
7. Trachea is supported by incomplete .... to make it permanently open.
   a. cilia b. mucus
   c. blood capillaries d. cartilaginous rings
8. Which of the following is the importance of cilia in trachea ? ....
   a. Moistening the air. b. Making it permanently open.
   c. Ejecting up dust. d. (a) , (b) and (c).
9. .... is called the voice box.
   a. Larynx b. Diaphragm c. Epiglottis d. Alveoli
10. The epiglottis ....
    a. closes the trachea during swallowing.
    b. prevents food from entering the trachea.
    c. sweeps the strange objects out of the trachea.
    d. (a) and (b).
11. .... is (are) located inside the lungs, where gases exchange takes place.
    a. Trachea b. Epiglottis c. Alveoli d. Larynx

12. .... is the muscle that separates the thoracic cavity from the abdominal cavity and has an important role in breathing.
a. Diaphragm b. Nose c. Pharynx d. Epiglottis

13. Inside the lung, bronchioles end in ....
a. blood capillaries. b. alveoli.
c. cilia. d. cartilaginous rings.

14. The two lungs are surrounded by ....
a. diaphragm. b. ribs (rib cage). c. trachea. d. cilia.

15. Air enters the two lungs in the .... process.
a. inhalation b. exhalation c. excretion d. digestion

16. Air rich in carbon dioxide gas is released outside the two lungs during the .... process.
a. inhalation b. exhalation c. digestion d. absorption

17. When the diaphragm muscle contracts, the .... process takes place.
a. excretion b. digestion c. exhalation d. inhalation

18. During the inhalation process, ribs ....
a. move up. b. move down.
c. move backwards. d. don't move.

19. Exhaled air contains .... gas and water vapour.
a. oxygen b. carbon dioxide
c. nitrogen d. (a), (b) and (c)

20. The number of respiration times increases in .... case.
a. sitting b. running c. sleeping d. standing

21. The gas which makes limewater turbid when passing through it is ....
a. oxygen. b. nitrogen.
c. carbon dioxide. d. hydrogen.

22. Gas exchange during the process of respiration occurs in the ....
a. trachea. b. nose. c. mouth. d. alveoli.

23. What is the path of carbon dioxide gas during exhalation process ? ....
a. Nose → Pharynx → Larynx → Trachea → Alveoli → Blood.
b. Trachea → Larynx → Bronchus → Alveoli.
c. Blood → Alveoli → Bronchus → Trachea → Larynx → Pharynx → Nose.
d. Alveoli → Bronchus → Trachea → Larynx.

LESSON 2

24. All the following are methods to keep the respiratory system healthy except ....
    a. avoiding being in poor ventilation places.
    b. eating fruits rich in vitamin(C).
    c. keeping off the severe cold.
    d. smoking or being a passive smoker.

2. Put (✓) in front of the right statement and (x) in front of the wrong one, then correct it :

1. The respiratory system exists in the thoracic cavity. (   )
2. Nose and pharynx are parts of the respiratory system. (   )
3. Nose is the first organ of the respiratory system, through which oxygen gas enters the body. (   )
4. There are tiny blood vessels inside nose to filter air from dust. (   )
5. Air enters lungs during the inhalation process. (   )
6. When the diaphragm muscle contracts, it moves downwards and ribs move upwards. (   )
7. Trachea contains cartilaginous rings. (   )
8. Cilia in trachea eject up strange objects. (   )
9. Larynx is known as the voice box. (   )
10. Alveoli are found in trachea. (   )
11. In the inhalation process, the diaphragm muscle contracts. (   )
12. Gases exchange takes place in the trachea. (   )
13. Respiration process includes three processes which are inhalation, exhalation and absorption. (   )
14. Respiration process is the process by which a human obtains energy from burning of the digested food. (   )
15. Exhalation process is a process by which oxygen gas enters the lungs. (   )
16. The inhaled air differs from the exhaled air as the exhaled air contains carbon dioxide gas and water vapour. (   )
17. The limewater is used to detect the presence of carbon dioxide gas. (   )

18. The volume of thoracic cavity increases during the inhalation process and decreases during the exhalation process. (   )
19. Gases exchange takes place between alveoli and the blood capillaries. (   )
20. During exchange of gases, blood leaves carbon dioxide gas and carries oxygen gas to distribute it all over the body cells. (   )
21. The diaphragm separates the thoracic cavity from the abdominal cavity. (   )
22. You should breath (or respire) through your mouth not through your nose. (   )
23. To keep the respiratory system healthy, we should eat fruits rich in vitamin (C). (   )
24. Living organisms can't respire. (   )

3. Correct the underlined words :

1. It is preferable to breathe through the mouth. (..................)
2. The two lungs exist in the abdominal cavity. (..................)
3. Cilia closes the larynx (or trachea) during swallowing of food. (..................)
4. Trachea is lined with hairs to eject up strange objects. (..................)
5. During inhalation, the air rich in carbon dioxide gas is expelled outside the body. (..................)
6. Air carrying oxygen gas transfers from lungs to outside the body through the nose. (..................)
7. Gases exchange takes place in trachea. (..................)
8. Digestion process takes place between alveoli and blood capillaries. (..................)
9. Limewater is used to detect the presence of oxygen gas. (..................)

4. Write the scientific term of each of the following :

1. It is the process by which a human obtains energy from burning of the digested food. (..................)
2. The required gas for the respiration process. (..................)
3. The system that consists of nose, pharynx, trachea, two bronchi, two lungs and diaphragm. (..................)
4. The gas that is produced in the exhalation process and turns clear limewater into milky (turbid). (..................)
5. The first organ of the respiratory system, where oxygen gas enters the body. (..................)

LESSON 2

6. The common cavity between the digestive system and the respiratory system. (..................)
7. The respiratory tube that is supported by incomplete cartilaginous rings that make it permanently open. (..................)
8. A tube in the respiratory system that is lined with cilia. (..................)
9. An organ found at the top of trachea and is called the voice box. (..................)
10. A structure found at the top of larynx and it closes the trachea during swallowing to prevent food from entering the trachea. (..................)
11. Two narrow tubes found at the bottom of the trachea. (..................)
12. Tiny air sacs found in the two lungs. (..................)
13. Two organs consist of tiny air sacs and they exist in the thoracic cavity. (..................)
14. A process by which oxygen gas enters the two lungs. (..................)
15. The process by which carbon dioxide gas and water vapour are expelled outside the body. (..................)
16. The process in which diaphragm muscle contracts and moves down، and ribs rise upwards. (..................)
17. The process in which the thoracic cavity enlarges and the air rich in oxygen gas enters the two lungs. (..................)
18. The process in which the thoracic cavity becomes narrow and the air rich in carbon dioxide gas goes out from the two lungs. (..................)
19. The muscular membrane that separates the thoracic cavity from the abdominal cavity. (..................)
20. The air that contains carbon dioxide gas and water vapour. (..................)
21. The gas that turns the clear limewater into turbid. (..................)

5. Complete the following statements :

1. The digested food is burned inside the body cells in the presence of .... gas and this process is called ....
2. .... is a process by which a human obtains energy from burning of the digested food.
3. The respiration process takes place in .... system.
4. The respiratory system exists in .... cavity.

5. The respiratory system consists of ...., pharynx, ... , ... and two lungs.
6. .... are found in nose to warm the inhaled air.
7. The nose contains .... and .... to filter the inhaled air from dust.
8. Pharynx is a common cavity leads to .... system and .... system.
9. Trachea is supported by incomplete ....
10. At the top of trachea, there is .... that is called the voice box.
11. .... closes the trachea during swallowing.
12. The bottom of trachea is branched into two narrow tubes called ....
13. .... are located inside the thoracic cavity and surrounded by ....
14. The exchange of gases takes place in ....
15. Inside each lung, each bronchus is divided into .... that end in ....
16. .... muscle helps in the mechanism of respiration.
17. .... separates between thoracic cavity and abdominal cavity.
18. The respiration process includes .... and .... processes.
19. The number of respiration times .... when your body is more active.
20. Air enters the two lungs during the .... process and leaves them during the .... process.
21. .... is a process by which carbon dioxide gas and water vapour are expelled outside the body.
22. In the inhalation process, ... enlarges, while in the exhalation process, the thoracic cavity becomes ....
23. Diaphragm moves .... during inhalation and moves .... during exhalation.
24. The exhaled air is different from the inhaled air in containing .... and ....
25. Carbon dioxide gas causes the turbidity of ....
26. The air sacs are surrounded by a network of .... ,where gases exchange occurs.
27. The exchange of gases occurs in lungs between .... and ....
28. Smoking or being a passive smoker leads to .... causing ....
29. To keep the respiratory system healthy, you must eat fruits rich in .... as .... and ....

LESSON 2

6. Give reasons for the following :

1. The respiration process is very important.
2. Nose is lined with hairs and mucous layer.
3. Breathing through the nose is preferable to that through the mouth.
4. Trachea has incomplete cartilaginous rings.
5. Nose has blood capillaries.
6. Trachea is lined with cilia.
7. Food doesn't enter the respiratory system during swallowing of food.
8. The number of inhalation and exhalation times increases during running.
9. The exhaled air turns clear limewater into turbid.
10. The volume of chest cavity increases during the inhalation process.
11. Alveoli and blood capillaries have thin walls.
12. Alveoli are surrounded by a network of blood capillaries.
13. The exhaled air considered different from the inhaled air.

14. It is preferred for a human to skip being in crowded places.
....
15. Eating orange and guava is important.
....

7. What happens when ... ?

1. 📖 There are no mucous layer and hairs in the nose.
....
2. There is no blood capillaries in the nose.
....
3. There are no cartilaginous rings in the wall of the trachea.
....
4. 📖 The epiglottis is removed from the larynx of the human respiratory system.
....
5. There is no cilia in the trachea.
....
6. There are no blood capillaries around alveoli.
....
7. The diaphragm muscle moves down.
....
....
8. The diaphragm muscle moves up.
....
....
9. You blow in a test tube containing clear limewater.
....
10. You exhale several times in front of a mirror.
....

8. What is the function of ... ?

1. Respiration process.
....
....

2. Nose.

3. Mucous layer and hairs in nose.

4. Blood capillaries in nose.

5. Diaphragm muscle in the mechanism of respiration.

6. Incomplete cartilaginous rings in the trachea.

7. Trachea.

8. Epiglottis.

9. Alveoli.

10. Cilia in trachea.

11. Two lungs.

12. Blood capillaries around alveoli.

13. Limewater.

9. Compare between the inhalation process and the exhalation process.

10. **The opposite experiment represents the process of respiration.**

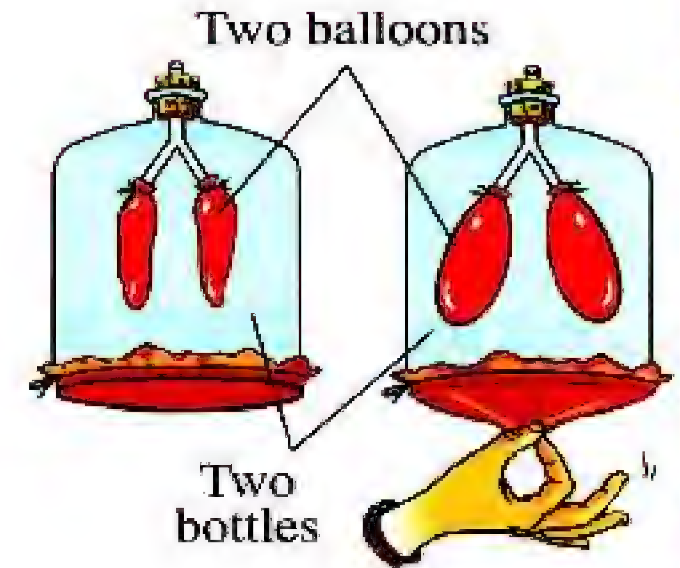
Explain the mechanism of respiration from your studying to this experiment.

....

....

....

....



11. **Mention how can you keep the respiratory system healthy.**

....

....

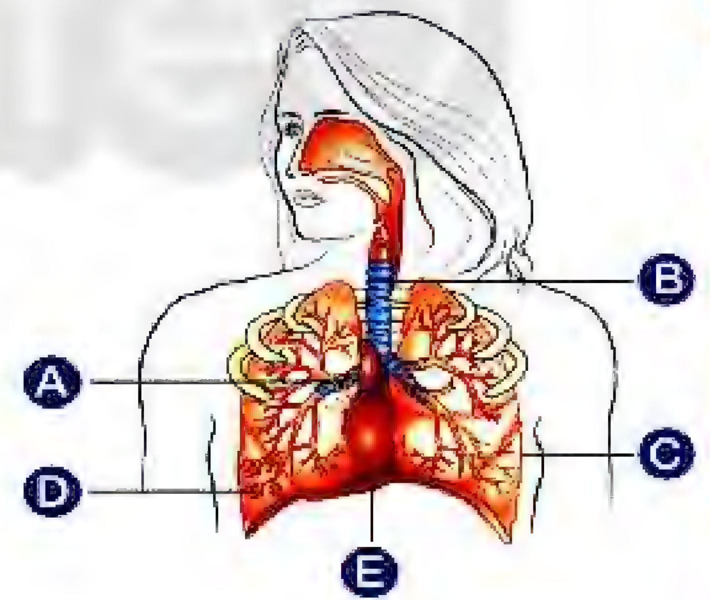
....

....

12. **The opposite diagram shows the respiratory system in the human being. Use the words below to complete the following table :**

Alveoli – Bronchus – Diaphragm – Trachea – Lung.

Letter	Organ's name	Function
A		
B		
C		
D		
E		



Timss Questions

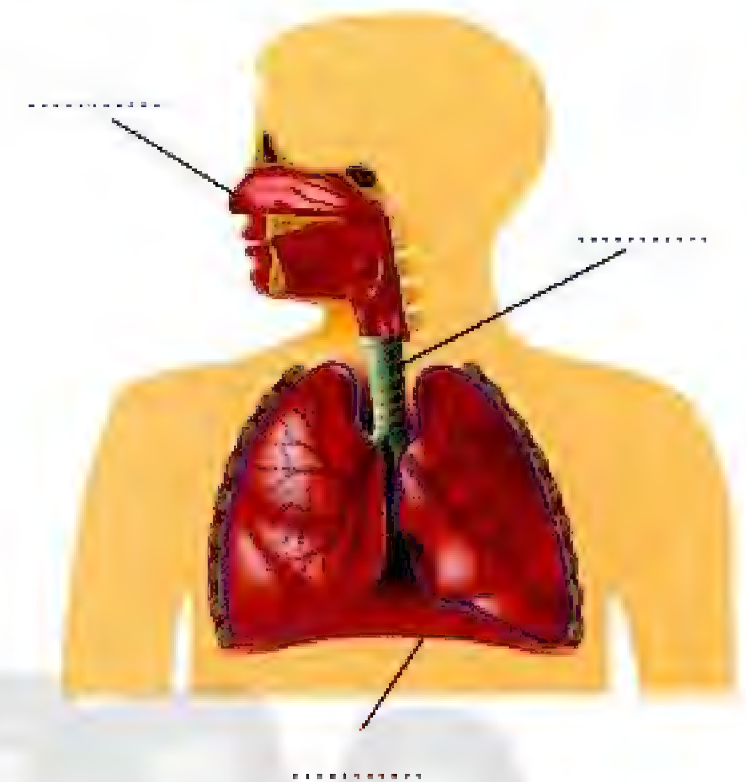


1. **Put on the figure, the letters and the name of organs that represent the answer of the following questions :**

   a) The cartilaginous tube.

   b) The muscle that has an important role in the respiration process.

   c) The first organ of the respiratory system that filters the air from dust and microbes before entering the lungs.



2. **Write the scientific term :**

   1. Nose ⟶ Pharynx ⟶ Larynx ⟶ Trachea ⟶ Bronchus ⟶ Alveoli ⟶ Blood. (..................)

   2. Blood ⟶ Alveoli ⟶ Bronchus ⟶ Trachea ⟶ Larynx ⟶ Pharynx ⟶ Nose. (..................)

3. **The opposite experiment represents the mechanism of respiration process.**

   Mention :

   1. Two balloons represent ....
   2. Plastic bottle represents ....
   3. Rubber membrane represents ....
   4. Figure (a) represent the .... process.
   5. Figure (b) represents the .... process.

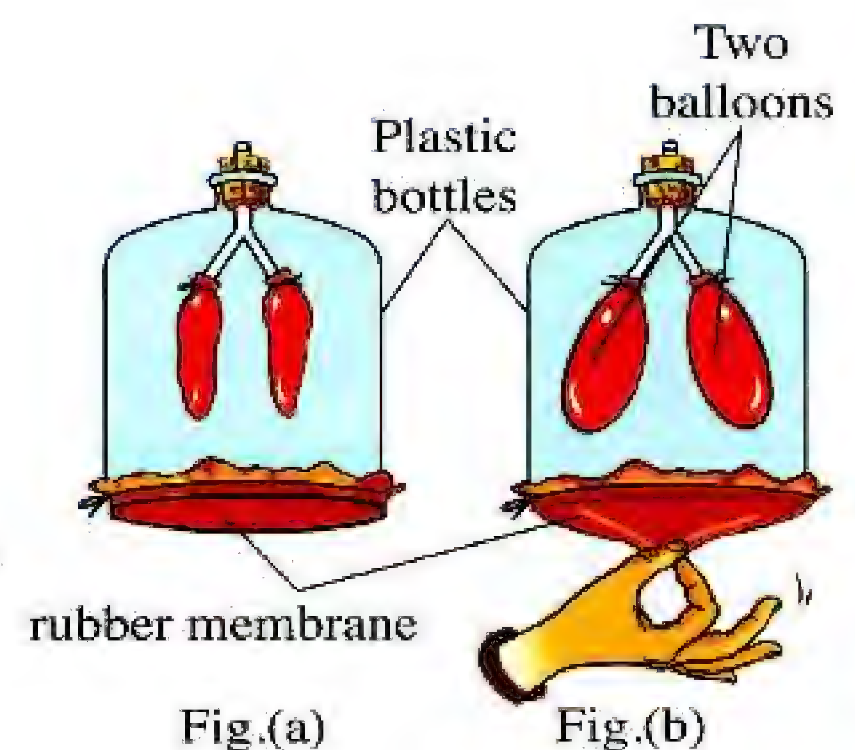


Fig.(a) Fig.(b)

4. Classify the following statments in the table below :

a. The diaphragm muscle contracts and moves down.

b. The ribs move downwards.

c. The air rich in carbon dioxide gas and water vapour is expelled out of the lungs.

d. The thoracic (chest) cavity elnarges and air rich in oxygen gas enters the lungs.

e. The diaphragm muscle relaxes and moves up.

f. The ribs move upward.

The inhalation process	The exhalation process
....	....
....	....
....	....



3 LESSON

The cell-The building unit of living organisms

- What is your body made up of ?

The Body consists of :

Systems → each system consists of → Organs → each organ consists of → Tissues → each tissue consists of → Symmetric Cells

Living organisms are classified according to the number of cells into

1 Multicellular living organism



Ex : Humans, animals or plants have more than one cell.

2 Unicellular living organism



Ex : Organisms that have one cell.

1 Multicellular living organisms

- **As *humans* , *animals* and *plants*.**
- To study these organisms, we must study their bodies.

multicellular living organisms كائنات عديدة الخلية unicellular living organisms كائنات وحيدة الخلية symmetric cells خلايا متشابهه

Human or Animal body
It consists of :


Digestive system

Systems
that work integrally to keep the life of a living organism as digestive and respiratory systems.

Each system consists of


Stomach (organ)

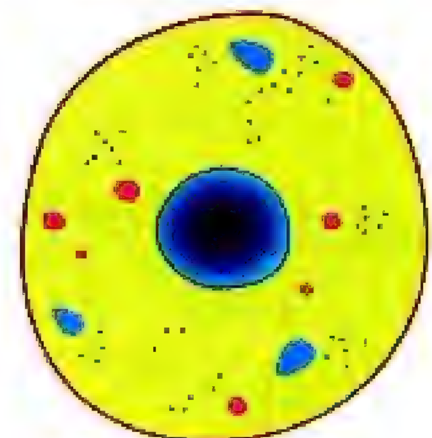
Organs
as stomach, liver, heart , two lungs , ... etc.

Each organ consists of


Tissue

Similar or different **tissues**.

Each tissue consists of


Animal cell

Symmetric units called **cells.**

- ***So,*** *the building unit of an animal body is the animal cell.*

integrally	بتكامل	symmetric units	وحدات متشابهه
animal cell	خلية حيوانية		

LESSON 3

Plant body *It consists of :*

Systems
as shoot system and root system.



Root system & shoot system

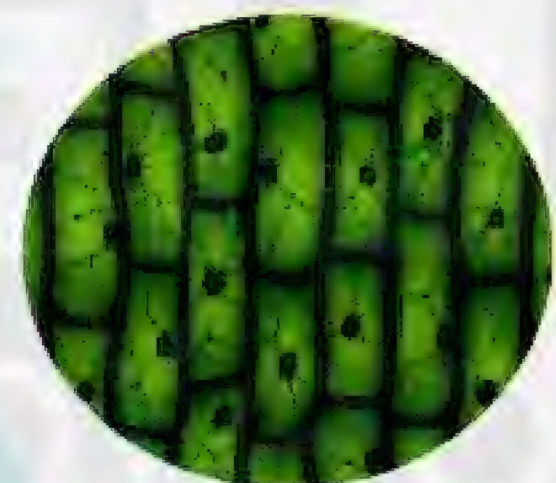
Each system consists of

Organs
as root , stem , leaves , ... etc.


Leave (organ)

Each organ consists of

Similar or different
tissues.


Tissue

Each tissue consists of

Symmetric units called
cells.


Plant cell

- **So,** the building unit of a plant body is the plant cell.

shoot system	المجموع الخضري	leaves	أوراق	root	جذر
stem	ساق	root system	المجموع الجذري	plant cell	خلية نباتية

The cell :

- It is the building unit of the living organism's body.

Or

- It is the unit of structure and function in living organisms.

Now, **we will study : A. The plant cell**

B. The animal cell

A The plant cell

It is the building unit of the plant body.

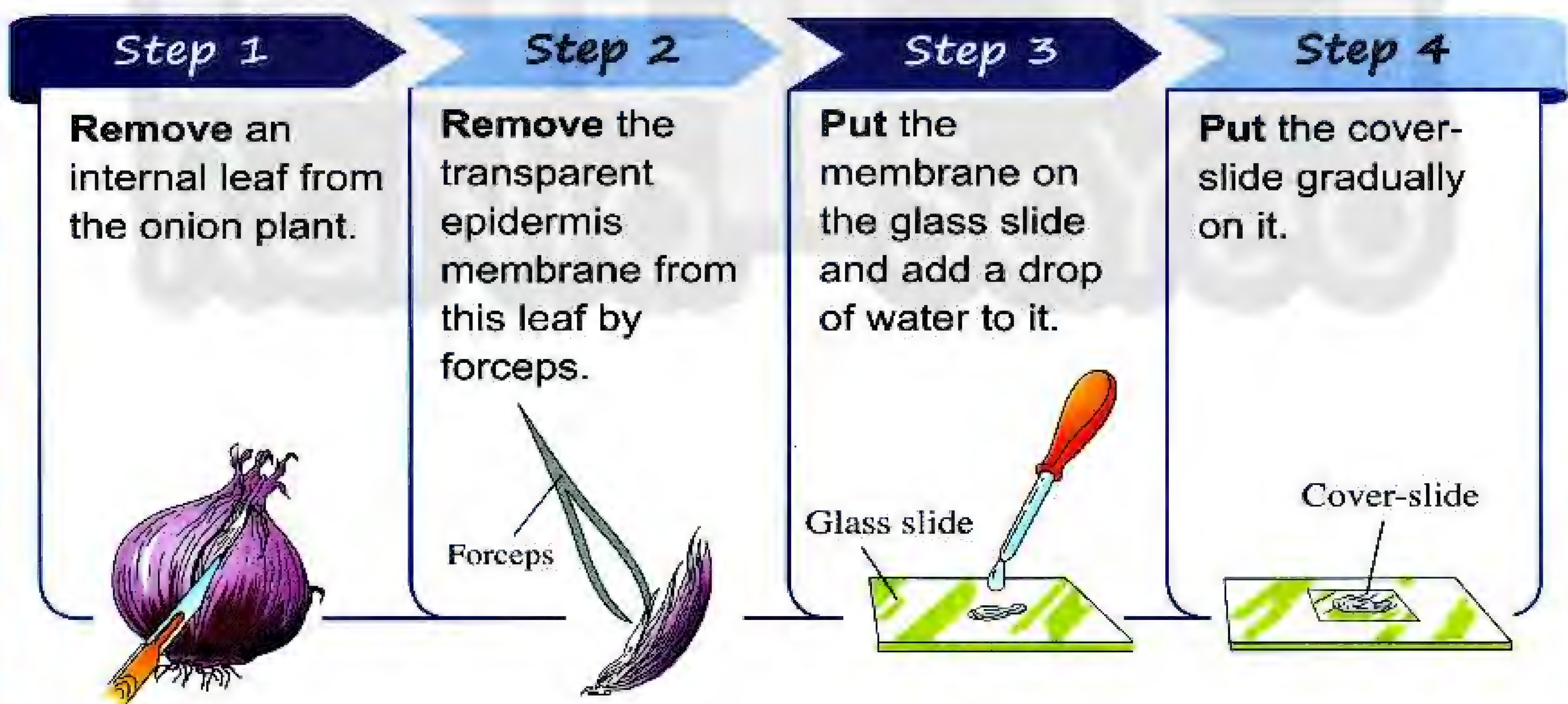
To study the plant cell , we must prepare a slide of a plant cell.

⊙ Stages of preparing a slide of onion (plant) cells.

Tools :

Forceps – A glass slide – A cover-slide – An onion plant.

Steps :

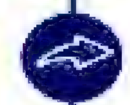


unit of structure and function	وحدة التركيب والوظيفة	slide	شريحة	transparent	شفاف
prepare	يحضر	cover-slide	غطاء شريحة	internal leaf	ورقة داخلية
forceps	ملقاط	onion plant	نبات البصل	epidermis	البشرة



LESSON 3

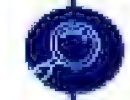
Activity 1 To prove that the plant tissue is made up of similar units called plant cells.



Steps:

1. Examine the previous prepared slide by the magnifying lens.


Magnifying lens

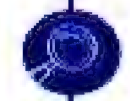


Observation:

Presence of similar units that are arranged together.

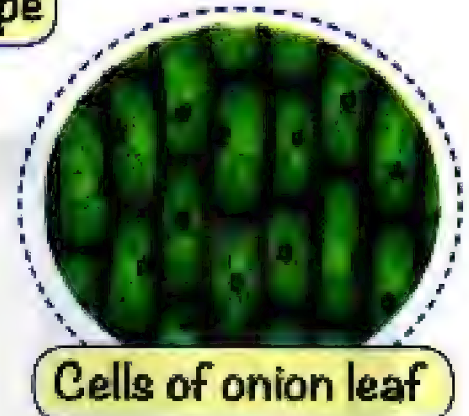
2. Examine one of the similar units by the compound microscope.

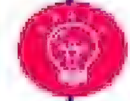

Compound microscope



Observation:

The plant cell contains many components.


Cells of onion leaf



Conclusion:

The plant tissue is composed of similar units known as plant cells, where each cell contains many components.

Exercise

Write the scientific term :

1. *A group of similar cells.* (.......................)
2. *The building unit of a plant body.* (.......................)
3. *Roots , stems and leaves.* (.......................)

Answer

1. *Tissue.* 2. *Plant cell.* 3. *Organs of a plant.*

Now, *after the examination of the plant cell, we can explain the structure of the plant cell as follow :*

examine	يفحص	magnifying lens	عدسة مُكبرة
compound microscope	ميكروسكوب مُركب	components	مكونات

The structure of the plant cell

PLANT CELL

1 Cell wall

It is the wall that surrounds the plant cell from outside.

Its function :
It supports the plant cell and gives it a definite shape.

2 Plasma (cell) membrane

It is the membrane that surrounds the cytoplasm.

Its function :
It controls the substances that enter or leave the cell.

3 Cytoplasm

It is a fluid that fills the cell and all the cell components are suspended in it.

Its function :
All the biological operations of the cell occur in it.

4 Nucleus

Its functions :
- It organizes the biological operations in the cell.
- It is responsible for the cell division.

5 Green plastids (chloroplasts)

Their function :
They are responsible for making food by absorbing the sunlight during the photosynthesis process.

6 Sap vacuole

support	يُدعم	control	يتحكم في	cytoplasm	السيتوبلازم
plasma membrane	الغشاء البلازمي	chloroplasts	البلاستيدات الخضراء	sap vacuole	فجوة عصارية
nucleus	نواة	surrounds	يحيط بـ	cell wall	الجدار الخلوي
definite	مُحدد	fluid	سائل لزج	fill	يملأ
suspended	مُعلق	biological operations	العمليات الحيوية	organizes	ينظم
responsible for	مسئول عن	cell division	إنقسام الخلية	photosynthesis process	عملية البناء الضوئي

LESSON 3

B The animal cell

It is the building unit of the animal body.

To study the animal cell, we must examine a ready made slide of an animal cell.



Activity 2

To prove that the plant tissue is made up of similar units called plant cells.

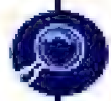


Step:

Check a ready made slide of mouth lining membrane of any animal by the microscope.



A group of animal cells



Observation:

Presence of similar units that are arranged together.



Conclusion:

The animal tissue is composed of similar units called animal cells, where each cell contains many components.

Exercise

Complete the following statements:

1. *The unit of structure and function in the plant body is .... , while the building unit of the animal body is ....*
2. *A plant tissue consists of .... , while the animal organ consists of ....*

Answer

1. *plant cell - animal cell.*
2. *plant cells - different or similar animal tissues.*

Now, after the examination of the animal cell, we can explain the structure of the animal cell as follow :

check يفحص mouth lining membrane غشاء مبطن للفم ready made slide شريحة جاهزة

The structure of the animal cell

ANIMAL CELL

1 Plasma (cell) membrane

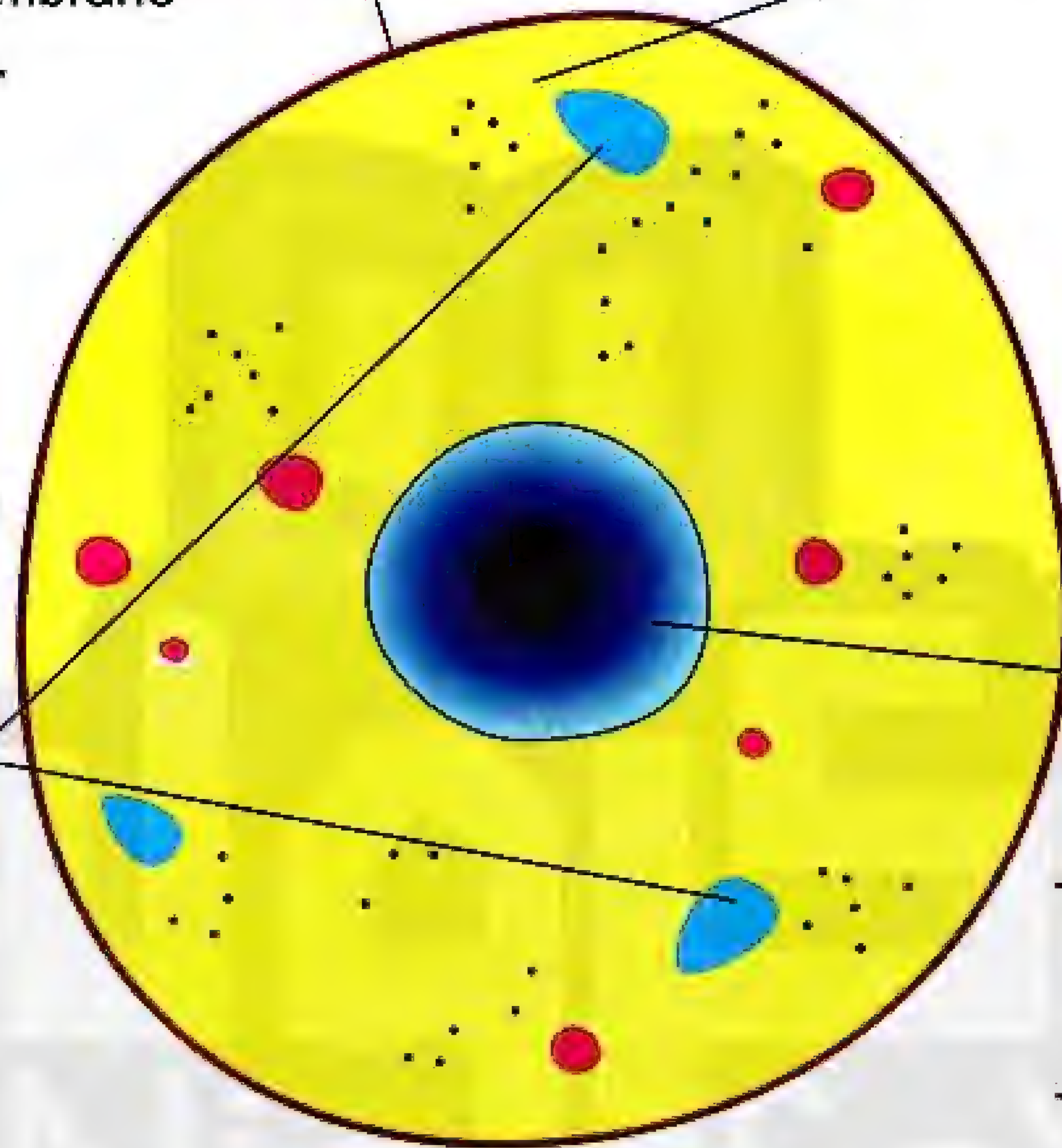
It is the outer membrane of the animal cell.

Its function :
It controls the substances that enter or leave the cell.

2 Cytoplasm

It is a fluid that fills the cell, where all the cell components are suspended in it.

Its function :
All the biological operations of the cell occur in it.



3 Nucleus

Its functions :
- It organizes the biological processes in the cell.
- It is responsible for the cell division.

4 Small vacuoles



NOTES

From your study of the structure of animal and plant cells, you find that :

- The plant cell is characterized than the animal cell by :
  the presence of **cell wall** and **green plastids (chloroplasts).**
- Both animal and plant cells are similar in :
  the presence of the **plasma membrane, cytoplasm** and **nucleus.**
- The animal cell has an indefinite shape. G.R.
  Due to the absence of cell wall.

indefinite shape شكل غير محدد

LESSON 3



Read and learn

- Scientists prefer using the electronic microscope than the normal microscope to see all the cell components.
- Cells are different in shape and size according to their locations and functions.
- The cells of one tissue are similar in shape and function, but they are different from the cells of another tissue.

Examples :

- In plants, the stem cells differ from the leaf cells.
- In human, the skin cells differ from the muscular cells.

2 Unicellular living organisms

- They are integrated living organisms that can't be seen by the naked eye as bacteria and yeast fungus.
- They prove that the cell is the unit of structure and function, because it has the ability to do all its biological functions.

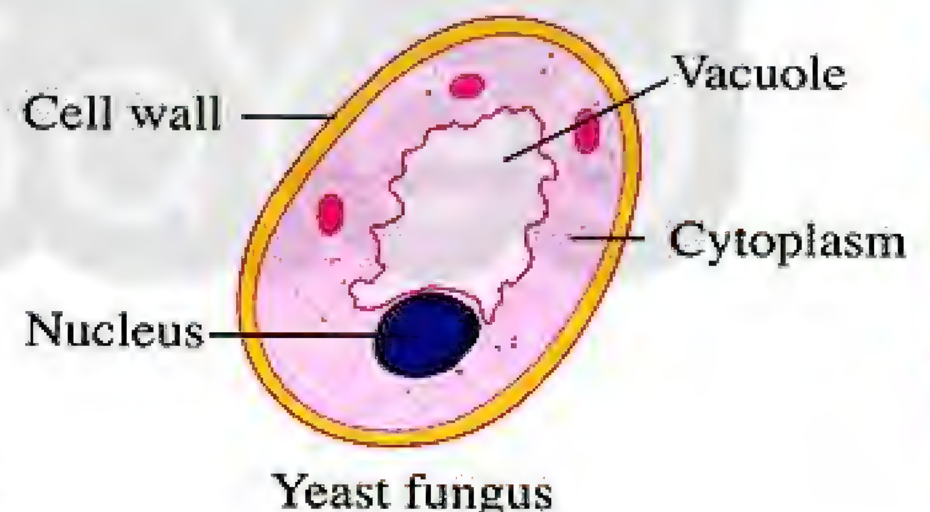


Activity 3 To examine the structure of a unicellular living organism as yeast fungus.



Step:

Examine a prepared slide of yeast fungus by the compound microscope.

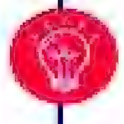


Yeast fungus



Observation:

Yeast fungus is composed of one cell that contains many components.



Conclusions:

1. The yeast fungus is a unicellular micro-organism.
2. It is made up of :
   - Cell wall that determines the cell shape.
   - Cytoplasm.
   - Nucleus.
   - Vacuole.

micro-organism	كائن دقيق	locations	الأماكن	skin cells	خلايا الجلد
scientists	العلماء	yeast fungus	فطر الخميرة	integrated organisms	كائنات متكاملة
biological functions	وظائف حيوية	electronic microscope	ميكروسكوب إلكتروني	ability	قدرة
naked eye	العين المجردة			muscular cells	خلايا عضلية

The economic importance of the yeast fungus

It is used in :

1 **Making bread**, where yeast produces carbon dioxide gas that causes the swelling of bread and makes it porous and light.



2 **Making alcohol**, where yeast changes a sugar solution into alcohol and carbon dioxide gas.





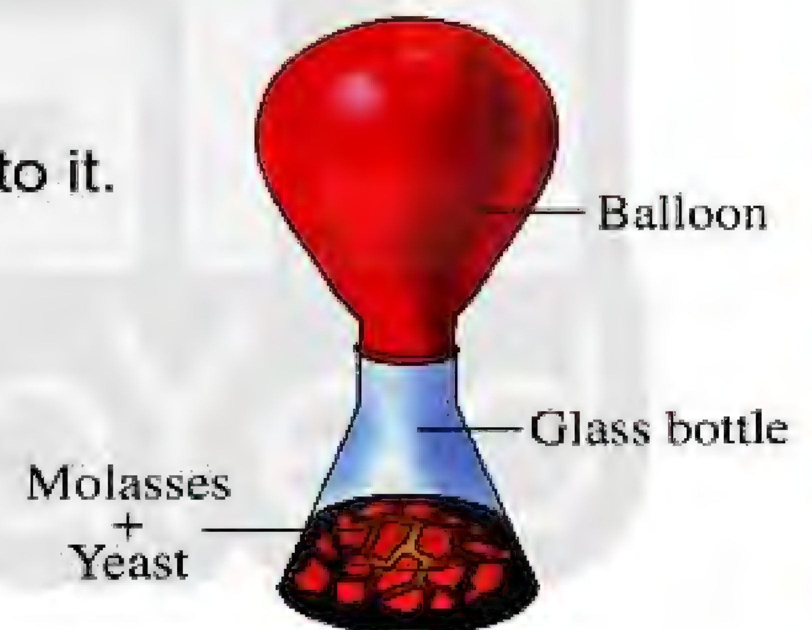
Activity 4

To prove that yeast produces carbon dioxide gas when added to a sugar solution.



Steps:

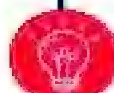
1. Bring a glass bottle containing molasses (a sugar solution) and add a piece of yeast to it.
2. Put a balloon on the mouth of the glass bottle, then put them in a warm place.





Observation:

The volume of the balloon increases.



Conclusion:

Yeast fungus produces carbon dioxide gas when added to a sugar solution.

G.R.

Yeast fungus is used in making bread.

Because during making bread, yeast produces carbon dioxide gas that causes the swelling of bread and makes it porous and light.

economic importance	أهمية إقتصادية	porous	مسامي	light	خفيف
swelling	إنتفاخ	molasses	عسل اسود	warm place	مكان دافئ
alcohol	كحول	bread	الخُبز		

LESSON 3



Read and learn

Some unicellular organisms are harmful, while others are useful :

- Harmful unicellular organisms such as bacteria that cause a lot of diseases.
- Useful unicellular organisms such as bacteria that are used in making yoghurt and some types of cheese.



Try to answer Worksheets 6 & 7 **in the Notebook.**

الآن

يمكنك الاستمتاع بشرح الدروس الآتية بطريقة مجسمة بتقنية "Augmented Reality" على هاتفك الذكى أو جهازك اللوحى :



The Plant Cell :

"El-Moasser Plant Cell 3D"





The Animal Cell :

"El-Moasser Animal Cell 3D"



وذلك من خلال





yoghurt زبادى

Remember



- A cell is the unit of structure and function in living organisms.
- **Comparison between animal cell and plant cell :**

Points of comparison	Animal cell	Plant cell
• Cell wall	Absent	Present
• Plasma membrane	Present	Present
• Nucleus	Present	Present
• Cytoplasm	Present	Present
• Green plastids	Absent	Present

- The plant cell is characterized than animal cell by the presence of **cell wall** and **green plastids.**

The function of nucleus :

- It organizes the biological operations in the cell.
- It is responsible for the cell division.

The function of cytoplasm :

All the biological operations of the cell occur in it.

The function of plasma membrane :

It controls the substances that enter or leave the cell.

The economic importance of yeast fungus :

1. It is used in making bread.
2. It is used in making alcohol.

Questions on lesson three



Questions signed by 📖 have been taken from the school book.

1. Choose the correct answer:

1. The correct structure of the human body is ....
   a. organ ⟶ tissue ⟶ cell ⟶ system.
   b. tissue ⟶ organ ⟶ cell ⟶ system.
   c. systems ⟶ organs ⟶ tissues ⟶ cells.
   d. organ ⟶ cell ⟶ tissue ⟶ system.

2. The .... is (are) from the human body organs.
   a. mouth b. heart c. liver d. (a) , (b) and (c)

3. Which of the following is considered as an organ ? ....
   a. Yeast fungus. b. Heart.
   c. The epidermis of the onion plant. d. Bean plant.

4. The stomach is ....
   a. a system. b. an organ. c. a cell. d. a tissue.

5. A tissue is ....
   a. a group of similar cells in structure and function.
   b. a group of different cells in structure and function.
   c. a group of organs. d. a group of systems.

6. Roots and leaves are from the plant ....
   a. systems. b. organs. c. cells. d. tissues.

7. The .... is the building unit of the animal body.
   a. plant cell b. animal cell
   c. animal tissue d. animal organ

8. The nucleus of the cell is suspended in the ....
   a. cell wall. b. cell membrane.
   c. cytoplasm. d. green plastids.

9. Which of the following can exist in the plant cell and can't exist in the animal cell ? ....
a. Nucleus. b. Chloroplasts. c. Cytoplasm. d. Cell membrane.

10. The plasma membrane surrounds the .... directly.
a. cytoplasm b. cell wall c. nucleus only d. green plastids

11. .... controls the substances that enter or leave the cell.
a. Cell wall b. Plasma membrane
c. Cytoplasm d. Nucleus

12. .... is a fluid in which all the cell components are suspended.
a. Cytoplasm b. Nucleus
c. Green plastids d. Cell wall

13. The biological operations occur in ....
a. cytoplasm. b. nucleus.
c. cell membrane. d. chloroplasts.

14. .... organizes the biological operations in the cell and it is responsible for the cell division.
a. Nucleus b. Cytoplasm
c. Green plastid d. Plasma membrane

15. .... is(are) responsible for making food by photosynthesis process.
a. Chloroplasts b. Nucleus c. Cytoplasm d. Cell wall

16. All the following are from the components of the animal cell except ....
a. nucleus. b. cell membrane.
c. chloroplasts. d. cytoplasm.

17. In both animal and plant cells , ... exist(s).
a. plasma membrane b. cytoplasm
c. cell wall d. (a) and (b)

18. The .... is an example of unicellular living organisms.
a. frog b. snake c. yeast fungus d. bean plant

19. All the following can be found in yeast fungus except ....
a. cytoplasm. b. nucleus. c. chloroplasts. d. cell wall.

20. Yeast fungus is used in making ....
a. bread. b. alcohol. c. oil. d. (a) and (b).

LESSON 3

2. Choose from column (B) what suits it in column (A) :

(A)	(B)
1. System 2. Cell 3. Plasma membrane 4. Cytoplasm 5. Yeast fungus	a. is used in making bread. b. controls the substances that enter or leave the cell. c. is a fluid in which, all the biological operations occur in it. d. consists of organs. e. is the unit of structure in living organisms.

1. .... 2. .... 3. .... 4. .... 5. ....

3. Put (✓) in front of the correct statement and (✗) in front of the wrong one, then correct it :

1. The organ consists of a group of tissues. ( )
2. Roots and stems are considered from the plant tissues. ( )
3. The building unit of the living organsim's body is the tissue. ( )
4. The cell wall surrounds the animal cell from outside. ( )
5. Controlling the substances that enter or leave the cell is the function of nucleus. ( )
6. The plant cell is similar to the animal cell in containing nucleus and cytoplasm only. ( )
7. The animal cell is surrounded by the cell wall. ( )
8. Plasma membrane fills the cell cavity and all biological processes are completed in it. ( )
9. Cell division is the function of nucleus in the cell. ( )
10. The plant cell differs from the animal cell in having cell wall and chloroplasts. ( )
11. Bacteria and yeast fungus are unicellular micro-organisms. ( )
12. The yeast fungus is a harmful micro-organism. ( )
13. Yeast fungus has economic importance as it is used in making jewellery. ( )

4. Correct the underlined words:

1. An animal cell is characterized by the presence of chloroplasts. (..................)
2. All the biological operations of the cell occur in cell membrane. (..................)
3. The nucleus controls the substances that enter or leave the cell. (..................)
4. A plant cell is surrounded from outside by plasma membrane. (..................)
5. Tissue is made up of a symmetric set of organs. (..................)

5. Write the scientific term of each of the following:

1. A group of symmetric cells. (..................)
2. A group of similar tissues. (..................)
3. A group of organs working together. (..................)
4. Roots, stems and leaves in the plant body. (..................)
5. The unit of structure and function in the living organism's body. (..................)
6. The building unit of the living organism's body. (..................)
7. The building unit of the plant body. (..................)
8. The building unit of the animal body. (..................)
9. The structure that surrounds the cytoplasm in the animal cell. (..................)
10. The living cell that contains chloroplasts. (..................)
11. The structure that controls the substances that enter or leave the cell. (..................)
12. The fluid that fills the cell, where the biological processes occur. (..................)
13. The structure that helps the plant cell to make its own food and characterizes the plant cell than the animal cell. (..................)
14. The cell component which plays an important role in the cell division. (..................)
15. The cell component which organizes the biological operations of the cell. (..................)
16. The unicellular living organism used in making bread. (..................)
17. The unicellular living organism used in making alcohol. (..................)
18. Small structures (organelles) spread in the cytoplasm of the plant cells and are responsible for photosynthesis process. (..................)

LESSON 3

6. Complete the following statements:

1. The two lungs are examples of .... , while .... is an example of plant organ.
2. The building unit of a living organism's body is called ....
3. .... is the building unit of the plant body.
4. The organ of the body of a living organism is formed of ....
5. Each tissue is formed of identical units of ....
6. 📖 The living organism's body is made up of systems integrated with each other, where each system is made up of .... that consist of .... , where each of them consists of .... that each of them has its own function.
7. The plant cell is composed of .... , ... , cytoplasm , ... and green plastids.
8. .... surrounds the plant cell from outside , while the plasma membrane surrounds .... cell from outside.
9. .... controls the substances that enter or leave the cell.
10. .... is responsible for the cell division, while .... are responsible for making food by photosynthesis process.
11. The plant cell is surrounded by .... , while the animal cell is surrounded by ....
12. The plant cell and the animal cell are similar in the presence of .... , ... and ....
13. The plant cell is characterized than the animal cell by the presence of .... and ....
14. 📖 One example of the unicellular living organisms is ....
15. The structure of yeast fungus is .... , ... , vacuole and ....
16. The yeast fungus is surrounded by .... that determines the cell shape.
17. The yeast fungus is used in making .... and ....

7. Give reasons for the following:

1. The stomach and the two lungs are organs.

....

2. Digestive system is an example of the living organism's systems.

....

3. The nucleus is a very important component in the cell.

....

4. The cell membrane is a very important component in the cell.

5. Plants can make their own food.

6. Plant cell contains chloroplasts.

7. The cell wall is a very important structure for the plant cell.

8. The unicellular organism is an integrated living organism.

9. Yeast fungus has a definite shape.

10. Yeast fungus has an economic importance.

11. Yeast fungus is used in making bread.

8. What happens if ... ?

1. There is no cell wall in the plant cell.

2. 📖 The abscence of chloroplasts in the corn plant cells.

9. What is the importance of each of the following ... ?

1. Nucleus.

2. The cytoplasm.

3. The plasma membrane.

4. The chloroplasts (green plastids).

5. Cell wall.

6. Yeast fungus.

....

10. Compare between the structure of the plant cell, animal cell and yeast fungus in the opposite table :

Points of comparison	Plant cell	Animal cell	Yeast fungus
1. Nucleus :	....	....	....
2. Cytoplasm :	....	....	....
3. Chloroplasts :	....	....	....

11. Examine the figures in front of you , then answer the following questions:

a. The figure (a) is ....

b. Label the figure :

❶ points to ....

❷ points to ....

❸ points to ....

❹ points to ....

❺ points to ....

❻ points to ....

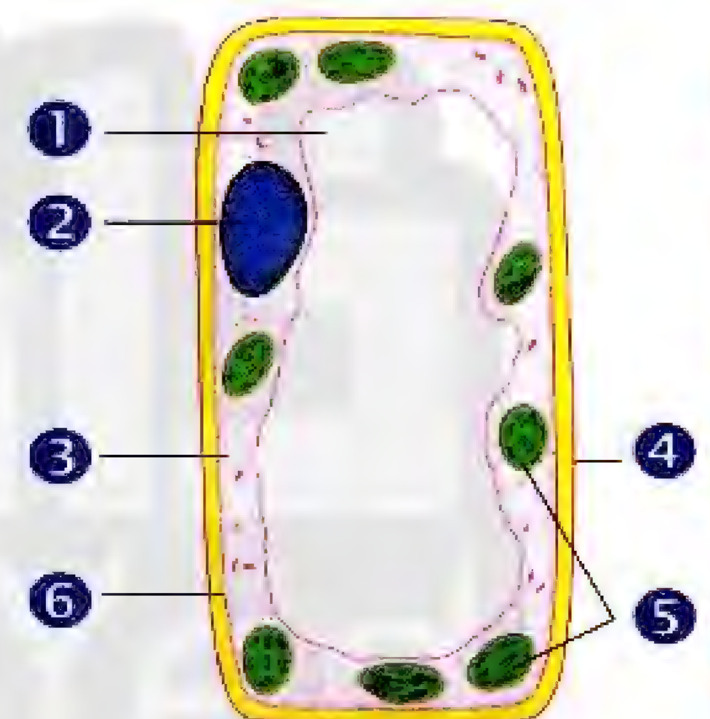


Fig. (a)

c. The figure (b) is ....

d. Label the figure :

❶ points to ....

❷ points to ....

❸ points to ....

❹ points to ....

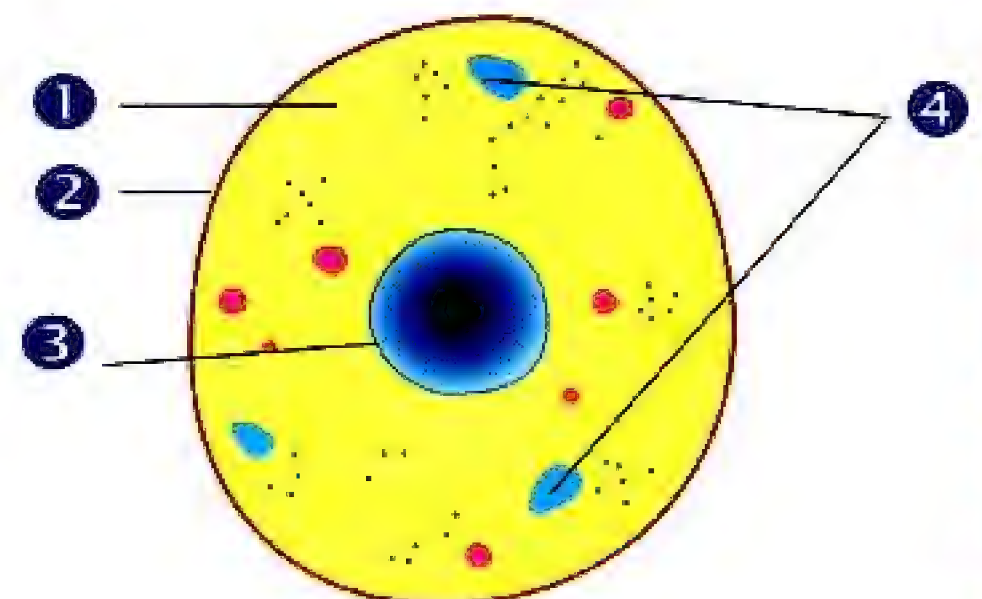
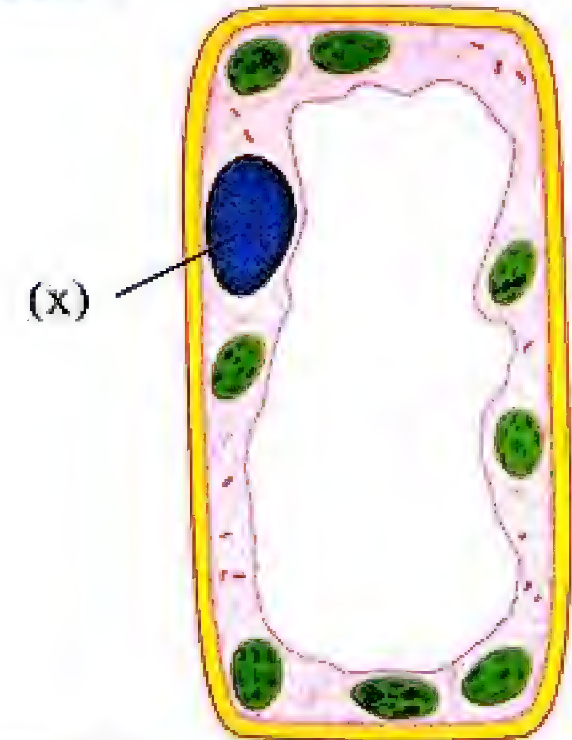


Fig. (b)



Timss Questions

1. Look at the opposite figure which represents the plant cell :



What is the function of part (x) ? ....

a. Stores water.

b. Produces food.

c. Absorbs energy.

d. Controls the cell division.

2. Look at the following figures, then answer this question.

Which diagram represents the animal cell ? Explain your reasons.

....

....

....

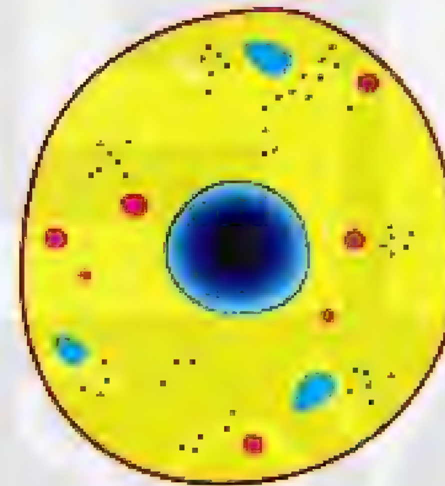


Fig. (a)



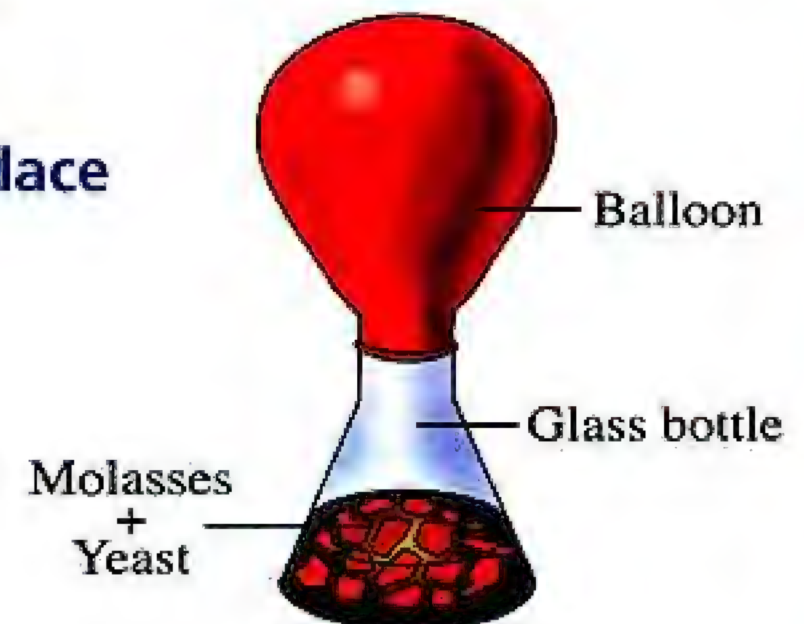
Fig. (b)

3. What happens when we add a piece of yeast to a glass bottle contains some molasses, then put a balloon on the mouth of the glass bottle, and place them all in a warm place ? Why ?

....

....

....



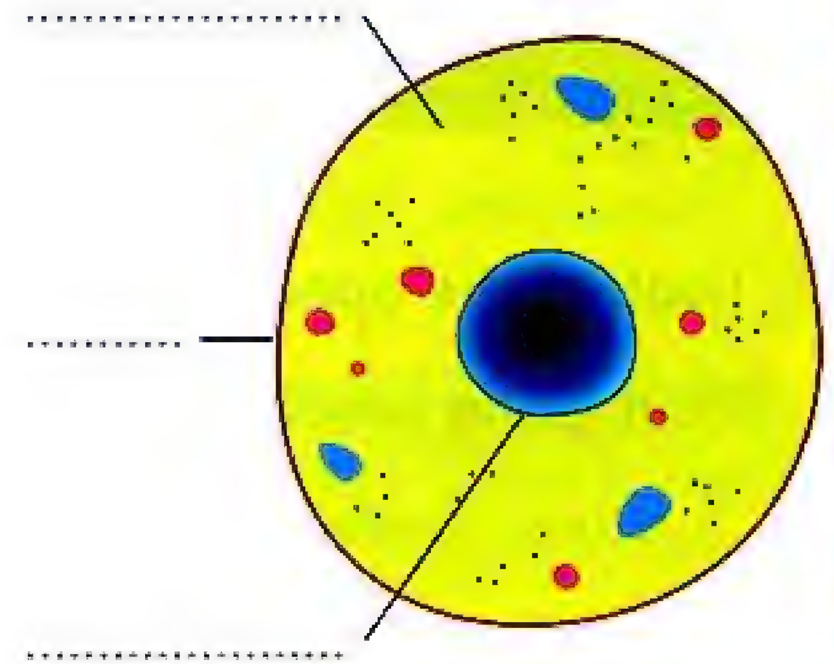
LESSON 3

4. Put on the figure, the letters and the name of the part that represent the answer of the following questions :

a. It controls the substances that enter or leave the cell.

b. All the biological operations of the cell occur in it.

c. It is responsible for the cell devision.



5. Classify the following statements in the following table :

a. It has cell wall that gives the cell a definite shape.

b. It has small vacuoles.

c. It has an indefinite shape due to absence of a cell wall.

d. It has a sap vacuole.

Plant cell	Animal cell
....	....
....	....
....	....



4 LESSON The importance of sunlight to living organisms

Sunlight is necessary for all living organisms, where :

1

Plants depend on sunlight to make their own food by photosynthesis process.

2

Some animals depend on plants in feeding.

3

Bacteria and **fungi** feed on dead animals and plants

Photosynthesis process

Photosynthesis process :

It is a biological process that takes place in the green parts (leaves) of a plant to make its own food.

depend on	يعتمد على	dead animals	حيوانات ميتة	fungi	فطريات
feeding	التغذية				

LESSON 4

How does the photosynthesis process occur ?

This process occurs in the green parts of the plant specially in the leaves.

Where ,

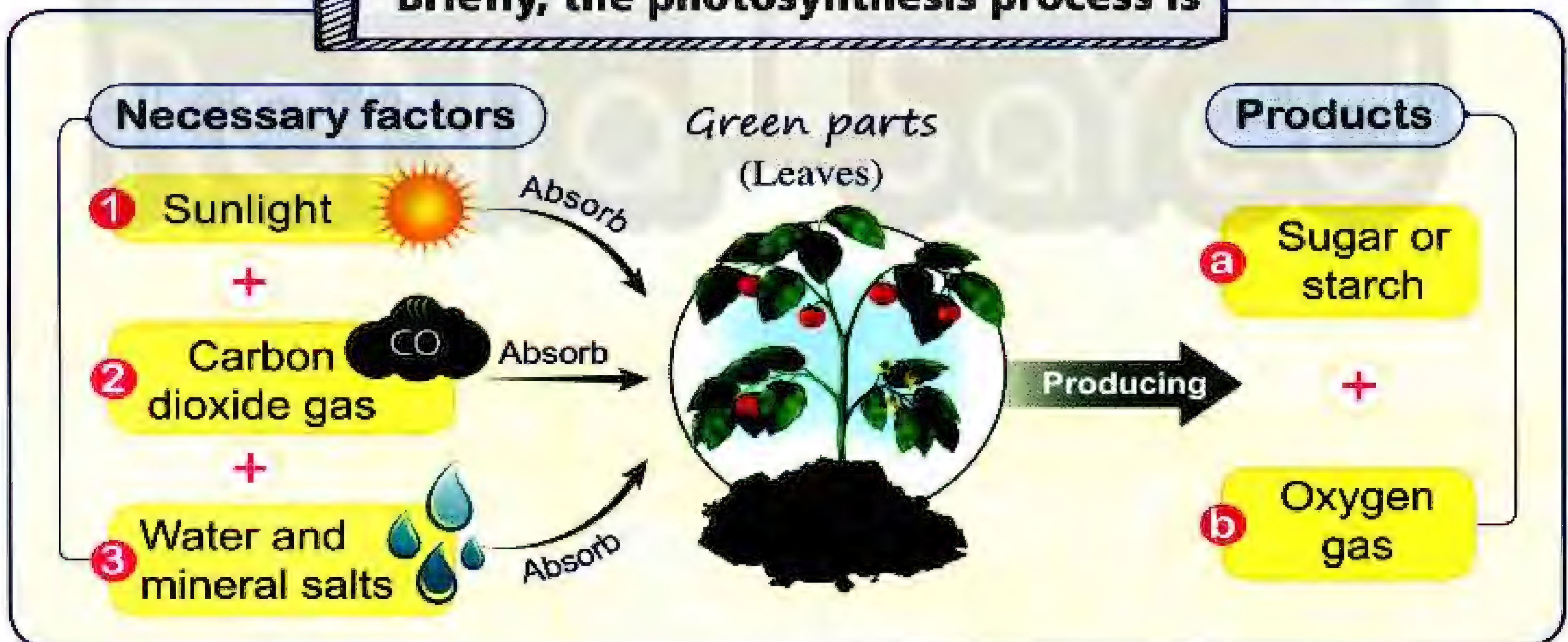
1. Leaves absorb sunlight by chloroplasts.
2. Leaves absorb carbon dioxide gas from air.
3. Roots absorb water and mineral salts from soil.
4. All the previous substances react together to produce :
   a. Plant food (starch or sugar).
   b. Oxygen gas.

NOTES

- **Chloroplasts** give the plant its green colour.
- **The plant roots** transport water and mineral salts from soil to stem and leaves.



Briefly, the photosynthesis process is



mineral salts	أملاح معدنية	react	يتفاعل
necessary factors	عوامل ضرورية	products	نواتج

Question

Arrange the following steps that explain the photosynthesis process in a green plant :

1. The plant leaves absorb carbon dioxide gas. (....)
2. The plant produces sugar and oxygen gas. (....)
3. The chloroplasts in the green leaves absorb sunlight. (....)
4. The plant roots absorb mineral salts and water from soil and transport them to stem. (....)



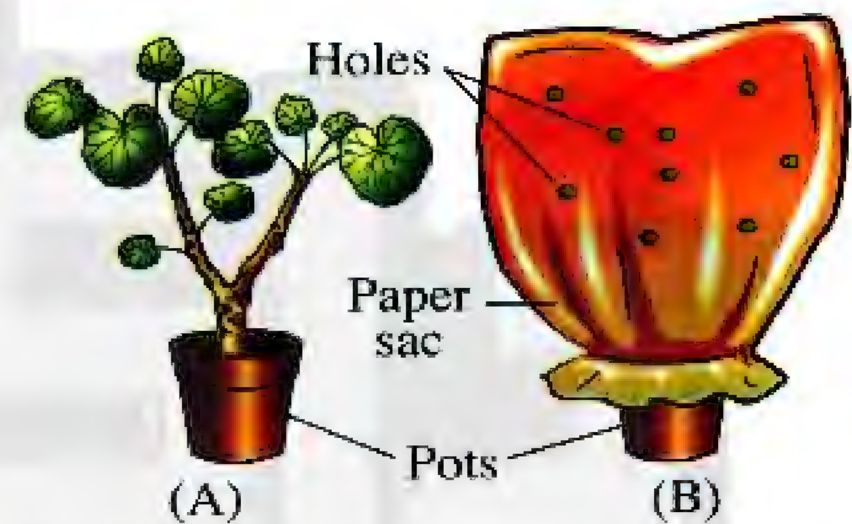
Activity 1

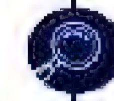
To show the importance of sunlight in the photosynthesis process of green plants.



Steps:

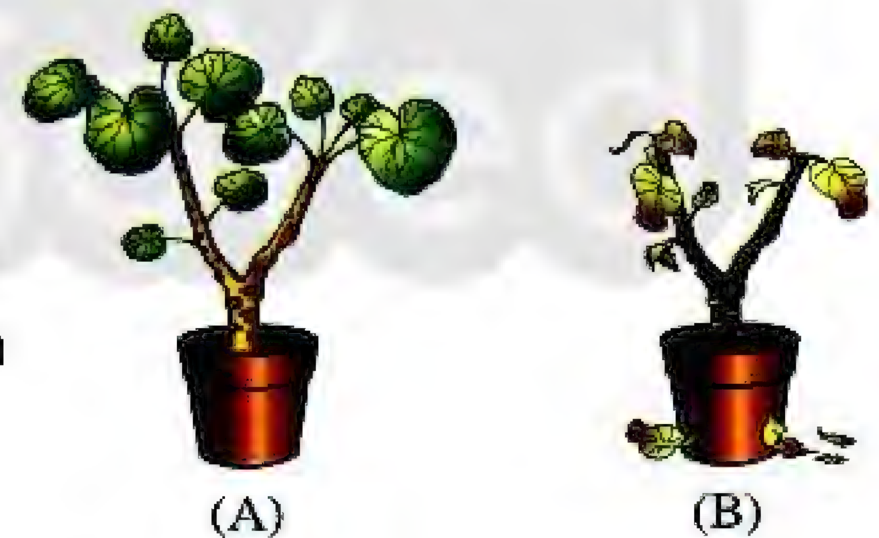
1. Bring two flower pots (A & B) , each one contains a green plant.
2. Cover plant (B) by a constructed paper sac with narrow holes to let the air passes.
3. Leave the two flower pots for two days and water them regularly.





Observation:

The leaves of plant (B) become yellow and weak , but the leaves of plant (A) are green and strong.





Conclusion:

Sunlight (light energy) is necessary for plants to make their own food by photosynthesis process, so the Sun is the main source of energy for plants.

water	يروي/ماء	constructed paper sac	كيس ورقي مقوى	narrow holes	ثقوب ضيقة
weak	ضعيف	flower pot	أصيص الزهور		

LESSON 4

NOTES

1. **Iodine solution** is used to detect the presence of starch, where colour of starch turns into blue colour.
2. • **In the photosynthesis process:**
   The green plants use carbon dioxide gas and release oxygen gas.
   • **In the respiration process of plants and animals:**
   The oxygen gas is used and carbon dioxide gas is produced.
   • So, the green plant is necessary for keeping the percentage of oxygen gas and carbon dioxide gas constant in the air.

Living organisms

are classified according to the way of their feeding into

A Producers **B** Consumers **C** Decomposers

A Producers

Producers

They are living (autotrophic) organisms that can make their own food by themselves through the photosynthesis process.

Examples :


Green plants


Green algae


Some types of bacteria

constant	ثابتة	iodine solution	محلول اليود
percentage	النسبة	keeping	الحفاظ
producers	كائنات منتجة	detect	يكشف
consumers	كائنات مستهلكة	green algae	طحالب خضراء
decomposers	كائنات محللة	autotrophic	ذاتى التغذية

B Consumers

Consumers :

They are living organisms that depend on producers directly or indirectly to get their food.

They don't depend on themselves to make their own food. G.R.
Due to absence of chloroplasts.

Types of consumers

1 Consumers feed on producers as :

Cows


Sheep
Chickens


Human

2 Consumers feed on consumers as :

Lions


Hawk
Snake


Human

G.R.

Human is considered as a consumer.
Because human feeds on producers or consumers that previously fed on producers.

indirectly غير مباشر directly مباشر
previously سابقاً

LESSON 4

C Decomposers

Decomposers :

They are living organisms that get their food by decomposing the organic wastes as dead bodies, plant remains and decayed food.

They can't make their own food. G.R.
Due to absence of chloroplasts.

Examples :

1. *Some types of bacteria as yoghurt bacteria.*



2. *Some types of fungi as yeast fungus and bread mold fungus.*



The importance of decomposers

1. They help us get rid of the bodies of dead organisms and the plant remains.



2. They increase the soil fertility.



3. They are used in a lot of industries.



organic wastes	البقايا العضوية	industries	صناعات	plant remains	بقايا النباتات
soil fertility	خصوبة التربة	bread mold fungus	فطر عفن الخبز	yoghurt bacteria	بكتريا الزبادى



- **Consumers and decomposers can't make their own food.**
  Due to absence of chloroplasts.
- **The bread mold fungus is a decomposer.**
  Because it gets its food by decomposing bread.

Read and learn

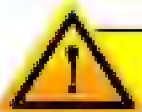
A lot of industries depend mainly on decomposers such as :

1. Production of organic fertilizers and biogas.



2. Tanning leather and others.





Pay Attention

- Don't touch the decayed food with your hand, but put on gloves before touching.
- When you buy preserved food, be sure of the validity date that is present on the cover.



Preserved food

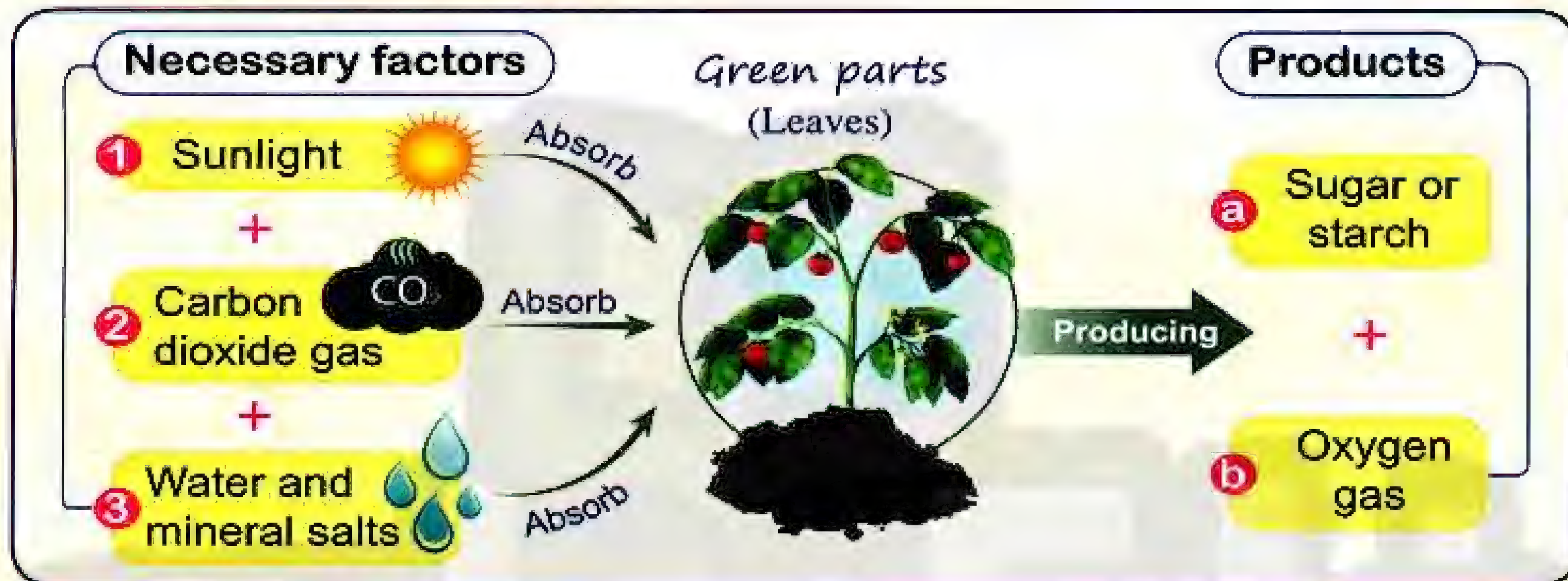
Try to answer
- Worksheet 8
- General exercise of the school book on Unit 1
- Model Exams on Unit 1 **in the Notebook.**

gloves	قفازات	decayed food	الطعام الفاسد
sure	مُتأكد	tanning leather	دباغة الجلود
organic fertilizers	أسمدة عضوية	validity date	تاريخ الصلاحية
biogas	الغاز المائى	preserved food	طعام محفوظ

Remember



- In photosynthesis process :



- Comparison between producers, consumers and decomposers :

Points of comparison	Producers	Consumers	Decomposers
1. Definition:	They are living (autotrophic) organisms that can make their own food by themselves through the photosynthesis process.	They are living organisms that depend on producers directly or indirectly to get their food.	They are living organisms that get their food by decomposing the organic wastes as dead bodies, plant remains and decayed food.
2. Chloroplasts :	Present.	Absent.	Absent.
3. Examples :	- Green plants. - Green algae. - Some types of bacteria.	- Feed on producers : Cows, sheep, chickens and human. - Feed on consumers : Lion, hawk, tiger and human.	- Some types of bacteria as yoghurt bacteria. - Some types of fungi as bread mold fungus and yeast fungus.

Questions on lesson four



Questions signed by 📖 have been taken from the school book.

1. Choose the correct answer :

1. The types of living organisms are classified into .... according to their way of feeding.
   a. producers
   b. consumers
   c. decomposers
   d. (a) , (b) and (c)
2. .... are living organisms that can make their own food by photosynthesis process.
   a. Green plants
   b. Green algae
   c. Decomposers
   d. (a) and (b)
3. 📖 .... are examples of producers.
   a. Green algae
   b. Reptiles
   c. Fungi
   d. Birds
4. 📖 Chloroplasts are found in ....
   a. green plants.
   b. consumers.
   c. decomposers.
   d. all the previous answers.
5. The photosynthesis process takes place in the .... of the plant.
   a. roots
   b. green parts
   c. seeds
   d. all the previous answers
6. Plants make their own food by the .... process.
   a. respiration
   b. photosynthesis
   c. circulation
   d. digestion
7. Plants make their food through the photosynthesis process in the existence of sunlight, carbon dioxide gas and ....
   a. nitrogen.
   b. water.
   c. oxygen.
   d. sugar.
8. 📖 Plants use .... in the photosynthesis process.
   a. oxygen gas
   b. nitrogen gas
   c. carbon dioxide gas
   d. water vapour
9. During the photosynthesis process, ... gas is evolved.
   a. carbon dioxide
   b. nitrogen
   c. oxygen
   d. chlorine

LESSON 4

10. The green leaves change into yellow due to ....
   a. absence of seeds.
   b. absence of nitrogen gas.
   c. absence of sunlight.
   d. all the previous answers.

11. Which of the following living organisms is not a producer ? ....
   a. Green algae.
   b. Wheat plant.
   c. Corn plant.
   d. Fungus.

12. .... are living organisms that depend on producers to get their food.
   a. Producers
   b. Consumers
   c. Decomposers
   d. Chloroplasts

13. All the following are considered as producers except ....
   a. bean plants.
   b. green algae.
   c. bread mold fungus.
   d. (a) , (b) and (c).

14. .... is an example of consumers that feed on producers.
   a. Cow
   b. Snake
   c. Tiger
   d. Lion

15. A hawk is an example of ....
   a. producers.
   b. consumers.
   c. decomposers.
   d. all the previous answers.

16. .... is an example of consumers that feed on consumers that previously fed on producers.
   a. Lion
   b. Cow
   c. Chicken
   d. Sheep

17. A human is considered as ....
   a. a producer.
   b. a consumer that feeds on producers.
   c. a consumer that feeds on consumers that previously fed on producers.
   d. (b) and (c).

18. .... are living organisms that can't make their own food by themselves due to absence of chloroplasts.
   a. Producers
   b. Consumers
   c. Decomposers
   d. (b) and (c)

19. The living organisms that get energy or food from the bodies of dead organisms are ....
   a. decomposers.
   b. consumers.
   c. producers.
   d. all the previous answers.

20. .... are examples of decomposers.
   a. Algae
   b. Reptiles
   c. Fungi
   d. Birds

21. 📖 Bread mold fungus is a ....
   a. producer.
   b. decomposer.
   c. consumer.
   d. all the previous answers.

22. The rot that is formed on bread is a type of ....
   a. bacteria.
   b. fungi.
   c. plants.
   d. animals.

23. All the following are from the importances of decomposers except ....
   a. helping us get rid of dead bodies of organisms.
   b. increasing the soil fertility.
   c. using them in a lot of industries.
   d. using them in the photosynthesis process.

2. Put (✓) in front of the correct statement and (×) in front of the wrong one, then correct it :

1. Plants are the main source of food and energy for man and animal. ( )
2. Green plants and green algae are examples of producers. ( )
3. Producers are living organisms that depend on consumers directly or indirectly to get their own food. ( )
4. Photosynthesis process is a process by which the plant makes its food (starch or sugar) in the existence of sunlight only. ( )
5. Starch and oxygen gas are produced by the plant through the respiration process. ( )
6. The chloroplasts which give a plant its green colour are responsible for the absorption of sunlight. ( )
7. Oxygen gas is essential (necessary) for the photosynthesis process. ( )
8. In the photosynthesis process, the plant takes oxygen gas and releases carbon dioxide gas. ( )
9. The main source of oxygen is the photosynthesis process. ( )
10. Iodine solution is used to detect the presence of sugar. ( )
11. Consumers are living organisms that make their own food by the photosynthesis process. ( )
12. Human feeds on producers and consumers. ( )
13. Lion, snake and hawk are consumers that feed on producers. ( )

LESSON 4

14. Consumers are living organisms that get their own food by decomposing the organic wastes as dead bodies of organisms. ( )
15. Dead bodies, plant remains and decayed food are considered the food of consumer organisms. ( )
16. Bread mold fungus and some types of bacteria are examples of decomposers. ( )
17. Green algae are considered from consumers. ( )
18. Increasing the soil fertility is from the importances of producers. ( )
19. Decomposers can make their own food by themselves through the photosynthesis process. ( )

3. Correct the underlined words :

1. Oxygen gas is necessary for the photosynthesis process. (..................)
2. The colour of iodine solution turns into red in the presence of starch. (..................)
3. Consumers are living organisms can make their own food by photosynthesis process. (..................)
4. Decomposers depend on producers directly or indirectly to get their own food. (..................)
5. Consumers are living organisms that get their own food through decomposing the organic wastes. (..................)

4. Write the scientific term of each of the following :

1. The process by which the plant makes its own food. (..................)
2. The main source of food and energy for man and animal. (..................)
3. A biological process that takes place in the green parts of the plant to make its own food. (..................)
4. Structures are found in the green leaves and they are responsible for the absorption of sunlight. (..................)
5. The products of the photosynthesis process. (..................)
6. The source of energy for plants to make their food. (..................)
7. The gas that is necessary for photosynthesis process. (..................)
8. The gas which is released from the photosynthesis process. (..................)

9. The substance that is used to detect the presence of starch in the plant leaves. (..................)
10. Living organisms that can make their own food by themselves through the photosynthesis process. (..................)
11. Green plants, green algae and some types of bacteria. (..................)
12. Living organisms depend on producers directly or indirectly to get their own food. (..................)
13. Living organisms depend on other living organisms to get their own food. (..................)
14. Living organisms get their own food through decomposing organic wastes as dead bodies, plant remains and decayed food. (..................)
15. They are living organisms that help us to get rid of dead bodies and plant remains. (..................)

5. Complete the following statements :

1. .... is considered as a source of energy for plants to make the photosynthesis process.
2. Living organisms are classified according to their way of feeding into .... , ... and ....
3. .... are living organisms that can make their own food by the photosynthesis process.
4. .... and .... are considered examples of producer living organisms.
5. .... is a biological process that takes place in the green parts of the plant to make its own food.
6. The process of photosynthesis needs the presence of .... , ... and ....
7. .... and .... are the products of the photosynthesis process.
8. The plant cells absorb sunlight by .... which give the plant its .... colour.
9. In the photosynthesis process, the plant absorbs .... and .... from soil, and .... from air.
10. In the photosynthesis process, ... gas is absorbed and .... gas is produced.
11. To check the existence of starch in the plant leaf, we use ....
12. The green plants produce .... gas during the process of photosynthesis.

LESSON 4

13. When iodine solution is added to starch, its colour turns into ....
14. The green plant is necessary for keeping the percentage of .... and .... constant in the air.
15. .... gas is evolved during the photosynthesis process, whereas .... gas is released as a product from the respiration process.
16. .... are living organisms that depend on producers directly or indirectly to get their food.
17. A human is considered as .... that feeds on producers and ....
18. Living organisms which are responsible for decomposing the remains of the living organisms are known as ....
19. .... and .... are examples of decomposers.
20. .... is considered as one of the producers, but .... is considered as one of the decomposers.
21. Bread mold fungus is considered as ....

6. Give reasons for the following :

1. Green plants are called producers.
   ....
2. There are chloroplasts in the cells of producers.
   ....
   ....
3. Plants need sunlight, water, carbon dioxide gas and mineral salts.
   ....
4. The green plant leaves become yellow and weak if they aren't exposed to sunlight.
   ....
5. The potted plant inside houses should be directed to sunlight.
   ....
   ....
6. Iodine solution is used to detect the presence of starch in the plant leaves.
   ....
7. Cows and chickens are considered as consumers.
   ....
8. Lion and tiger are consumers.
   ....
   ....

9. Bread mold fungus is considered as a decomposer.

10. Decomposers and consumers can't make their own food.

11. Food spoils if it is left outside the refrigerator for a long period of time.

12. Decomposers have great economical and environmental importance.

13. Green algae are considered as producers.

7. What happens when ...?

1. Plants aren't exposed to sunlight for few days.
2. The plant leaves have no chloroplasts.
3. Plants disappear from the environment.
4. The absence of decomposers from nature.

8. What is meant by ...?

1. Photosynthesis process.
2. Producers.
3. Consumers.
4. Decomposers.

LESSON 4

9. What is the importance of ... ?

1. Chloroplasts : ....
2. Iodine solution : ....
3. Sunlight for plants : ....
4. Decomposers : ....

....

....

....

10. Compare between producers, consumers and decomposers, then give examples of each type.

....

....

....

....

11. Classify the following living organisms into producers, consumers and decomposers.

Dog - Lion - Corn plant - Green algae - Yeast fungus - Human - Yoghurt bacteria.

....

....

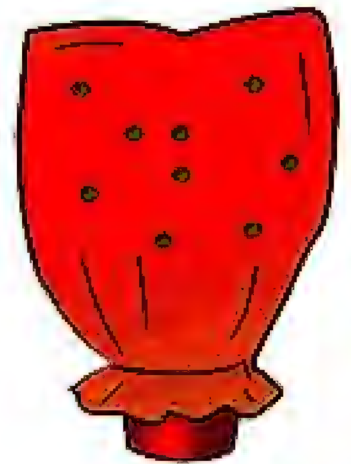
....

12. Look at the opposite figures, then answer :

1. Complete :
   a. The leaves of plant .... make their own food by the photosynthesis process.
   b. The leaves of plant .... become yellow and weak.



Plant (A)



Plant (B)

2. What are the products of photosynthesis process ? ....

Timss Questions



1. **In an experiment to test the presence of starch in the green leaves. You notice that the colour of iodine solution doesn't change into blue. Why ?**

a. Due to the shortage of water in leaves.
b. The leaves don't expose to sunlight.
c. The leaves don't have stomata.
d. The leaves don't have coloured plastids.

2. **The living organisms don't depend on themselves to make their food due to ....**

a. no time to make food.
b. absence of money.
c. absence of chloroplasts.
d. absence of carbon dioxide gas.
e. (c) and (d).

3. **The opposite picture shows a tree. Answer the following questions :**

a. The tree takes water from the soil. Mention the other substances that the tree must get them from the soil.

....

b. In order to make its own food, the tree also needs another substance from the air. Name this substance.

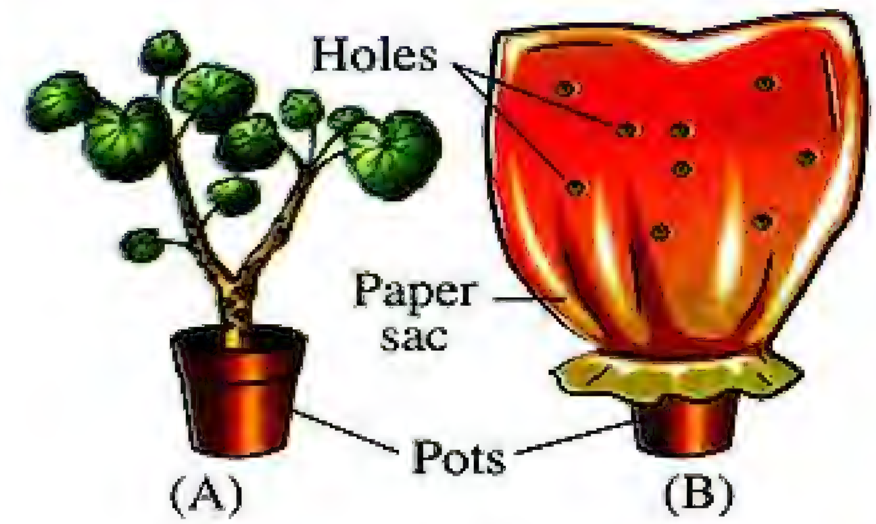
....

c. What is the name of the process that the tree uses to make its food ?

....

LESSON 4

4. a. If we have two plant pots (A) and (B), when we cover plant (B) by constructed paper sac with narrow holes then leave the two plant pots for two days in the sunlight.
What will happen to plant (B) and plant (A) ? Why ?



....

....

b. **Choose the correct answer :**

Why we cover plant (B) by constructed paper sac with narrow holes ?

a. To allow the air and the light pass to the plant.
b. To prevent the air and the light pass to the plant.
c. To allow the air only passes to the plant.
d. To prevent the air only passes to the plant.

UNIT 2 Energy and Its Forms



Lessons of the unit :

1. Forms of energy and their changes.
2. The electricity.

UNIT OBJECTIVES

By the end of this unit, you will be able to :

- Explain the concept of energy.
- Mention examples of different forms of energy.
- Determine the changes of energy in some equipments.
- Explain the concept of static electricity and current electricity.
- Describe some phenomena related with static electricity.
- Show the importance of electricity in life and its using in environment.

LESSON 1

Forms of energy and their changes

- To know the forms of energy, you must know :

The meaning of energy	Forms of energy	Some changes of energy

The meaning of energy

Look at the following pictures and mention what each person does.



The **boy** exerts **an effort** (work) to go up the stairs as his body **stores** energy.



The **pupil** exerts **an effort** (work) to move the bicycle as her body **stores** energy.

So,

Energy :

It is the ability to do work.

forms	أشكال/أنواع	changes	يتحول/تحولات	work	شُغل/يعمل	ability	قدرة
exert an effort	يبذل مجهود	go up the stairs	يصعد السلالم	store	يختزن		



Read and learn

- If you was sitting on a chair to watch television or to read a book, do you believe that you exert work or not ? In this case you don't exert work because you don't move.
- If you carried a bag in your hand and wait in your place at rest for 30 minutes, during this you don't exert work except during rising the bag.

Forms of energy

- There are pieces of equipment in your home which supply us with different forms of energy.
- This means that these pieces of equipment have the ability to do work.
- **Forms of energy are :**



1 Potential energy

It is the energy stored in **the spring of any toy as a toy car.**



2 Light energy

It is the energy produced by **the electric lamp or the Sun.**



3 Kinetic energy

It is the energy produced by **the electric fan** and **the washing machine.**

light energy	الطاقة الضوئية	washing machine	غسالة	potential energy	طاقة الوضع
equipment	أجهزة	supply	يمد	kinetic energy	طاقة الحركة
spring	زنبرك	electric lamp	مصباح كهربى	electric fan	مروحة كهربية

LESSON 1



4 Heat energy

It is the energy produced by the heater.



5 Electric energy

It is the energy produced by **the solar cells** and **dry cell (battery)**.



6 Chemical energy

It is the energy stored in **the battery**.



7 Sound energy

It is the energy produced by **the piano** and **the radio**.

Now, we will study one form of energy, which is sound energy.

Sound energy

Sound :

It is a form of energy, that reaches ear causing hearing.

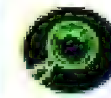
sound energy	الطاقة الصوتية	solar cells	خلايا حرارية (شمسية)	dry cell (battery)	بطارية جافة
heater	دفاية / سخان	heat energy	طاقة حرارية	electric energy	طاقة كهربية
chemical energy	طاقة كيميائية	hearing	السمع		



Activity 1 To learn how sound is produced.



Tools: A plastic ruler - A tuning fork.

Steps	Figures	Observations
A 1. Fix one end of a plastic ruler on a wooden table. 2. Pull the other end of the ruler downwards, then leave it.		The ruler vibrates and produces sound.
B 1. Catch a tuning fork from its handle and tap it on a wooden table. 2. Get the two prongs of the tuning fork near one of your ears quickly. 3. Touch one of the two prongs of the fork by your fingers after tapping it.		- You hear a sound. - You feel the vibration of its two prongs.



Conclusion:
Sound is produced (originated) due to the vibration of objects.

tuning fork	شوكة رنانة	handle	يد	two prongs	فرعىّ	wooden table	منضدة خشبية
originated	ينشأ	vibrate	يهتز	tap	يخبط		

LESSON 1



Read and learn

Examples to prove that sound is produced due to the vibration of objects :

1. When you touch your larynx during speaking, you find that it moves and vibrates producing sound.
2. When you put your hand on a speaker, that produces sound, you find that it vibrates producing sound.

Some changes of energy

Energy changes from one form to another inside pieces of equipment.

1 Changing potential energy into kinetic energy

- **Potential energy** is the energy stored in an object during rest.
- **Kinetic energy** is the energy that causes the motion of the body.

Example : The children toys with spring.







On **rotating** the spring of the toy :

- You do work in the form of kinetic energy.
- This kinetic energy changes into potential energy stored in the spring.

On **leaving** the spring of the toy :

The stored potential energy changes into kinetic energy causing the motion of the car.

G.R.

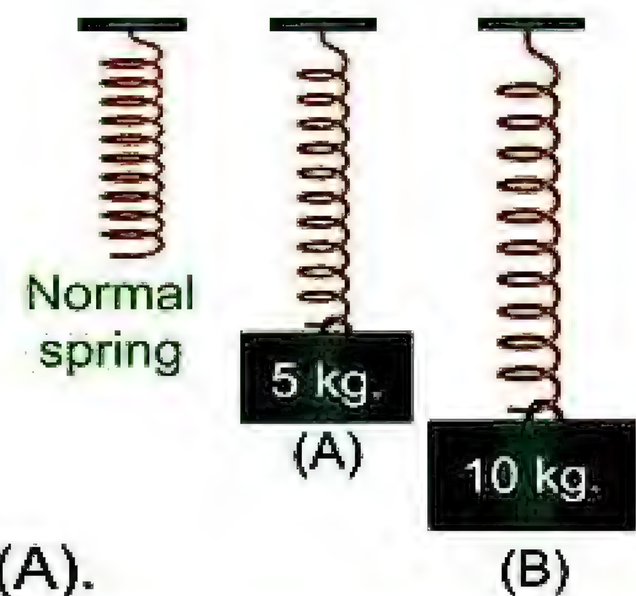
On filling the spring of a toy car, then let it free, the car moves.

Because the stored potential energy changes into kinetic energy that causes the motion of the car.

speaker سماعة filling يملأ rotating لف

NOTES

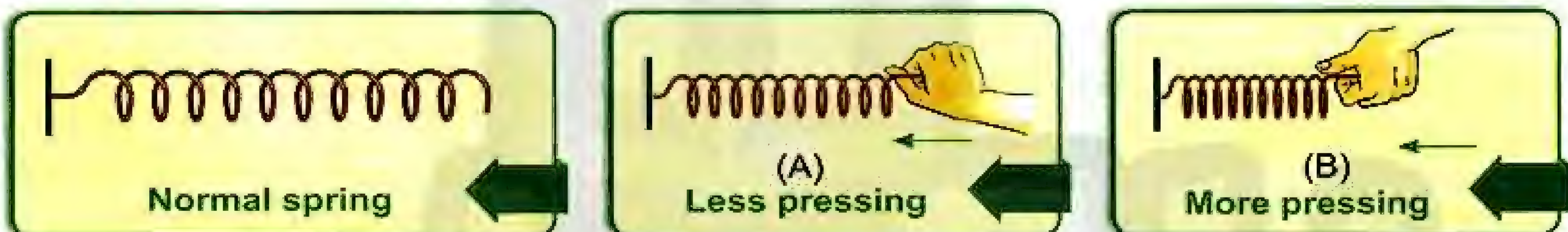
- When you do work by a spring, the stored energy in it is the potential energy.
- By increasing work, the stored potential energy increases and vice versa.



Example :

Spring (B) stores more potential energy than spring (A).

Exercise



1. Which spring stores a larger amount of energy ?
2. What is the name of energy that is stored in each spring ?
3. What happens if each of them is left free ?

Answer

1. Spring (B). *2. Potential energy.*
3. The two spring will return back to their normal positions.



Try to answer Worksheet 9 in the Notebook.

2 Changing kinetic energy into other forms of energy

Kinetic energy can be changed into

A Sound energy
B Heat energy
C Electric energy

vice versa	العكس صحيح	normal	طبيعى
pressing	ضغط		

LESSON 1

A Changing kinetic energy into sound energy

Examples :


Violin


Guitar


Knocking on the door



Activity 2 To prove that kinetic energy changes into sound energy.

Tools: A rubber band - two nails - a piece of wood of length 30 cm - a small hammer.

Steps	Figures	Observation
1. Fix the two nails to the piece of wood at a distance of 25 cm. by the hammer. 2. Tie the rubber band to the two nails as in fig. (a). 3. Pull the rubber band, then leave it as in fig. (b).	Rubber band, Nail Fig.(a) Fig.(b)	We will hear a sound.

Conclusion:

The kinetic energy of the rubber band changes into sound energy. G.R.
Due to the vibration of the rubber band.

violin	آلة الكمان	guitar	آلة الجيتار	knocking on the door	الطرق على الباب
fix	يثبت	tie	يربط	rubber band	شريط مطاط

B Changing kinetic energy into heat energy

Examples :


Rubbing your hands


Hammering on a piece of iron


Removing a nail from a piece of wood

G.R.

- **On rubbing your hands together, you feel warm.**
- **On hammering a piece of iron, it becomes hot.**

Because kinetic energy changes into heat energy.

C Changing kinetic energy into electric energy

Example : Dynamo.

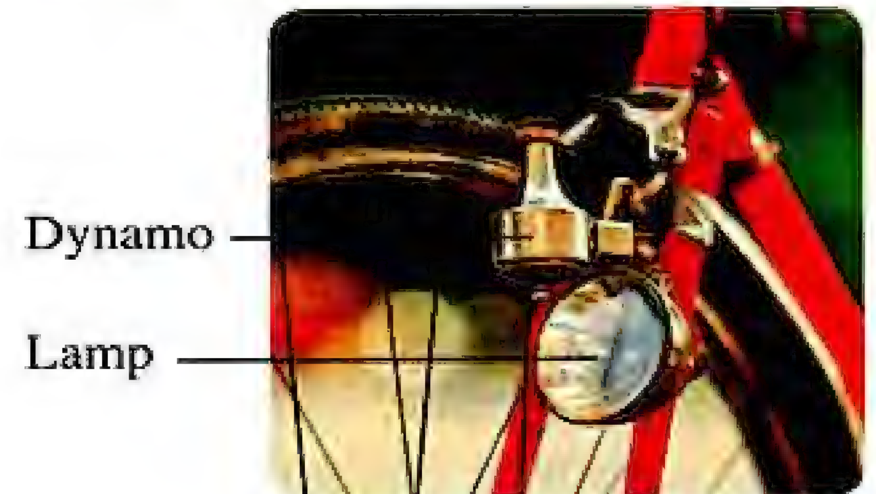


Activity 3 To prove that kinetic energy changes into electric energy.



Step:

Notice the light of a lamp of a bicycle at different speeds.





Observation:

On increasing the speed of the bicycle, the light of the lamp increases.

rubbing	تدليك	hammering	الطرق
removing	إزالة	feel warm	يشعُر بالدفىء
dynamo	الدينامو		

LESSON **1**

Explanation:

In a bicycle, there is a small piece of equipment called the dynamo that touches the wheel and changes the kinetic energy of the wheel into electric energy causing the lighting of the lamp.

Conclusion:

Kinetic energy changes into electric energy in the dynamo.

NOTE



G.R.

The light of the bicycle lamp increases by increasing the speed of the bicycle.

Due to increasing the kinetic energy produced from moving tires, that changes into more electric energy produced from the dynamo, that causes increasing in the light of the bicycle lamp.

Question

Choose the correct answer :

1. In guitar, ...
   a. kinetic energy changes into heat energy.
   b. kinetic energy changes into sound energy.
   c. kinetic energy changes into electric energy.
   d. kinetic energy changes into potential energy.

2. In dynamo, ...
   a. kinetic energy changes into electric energy.
   b. kinetic energy changes into light energy.
   c. kinetic energy changes into potential energy
   d. (a) and (b).

wheel عجلة tires إطارات

3 Changing electric energy into other forms of energy

Electric energy can be changed into

A Light energy **B** Kinetic energy **C** Sound energy

A Changing electric energy into light energy

Example : The electric lamp.

On passing the electric current through the lamp, it lights up.


The electric lamp

B Changing electric energy into kinetic energy

When the electric current (energy) passes through the electric motor of some devices, it changes into kinetic energy causing its rotation.

Examples :


Electric fan


Washing machine


Electric mixer

device	جهاز	electric current	التيار الكهربى	electric mixer	الخلاط
rotation	دوران				

LESSON 1

C Changing electric energy into sound energy

Examples :



Radio



Loudspeakers



Read and learn

- The electric generator (Dynamo) of the car feeds the battery with the electric energy.
- The battery gives the electric energy to the engine, which changes it into kinetic energy, so the car moves.

4 Changing light energy into other forms of energy

Light energy can be changed into

A Electric energy

B Heat energy

A Changing light energy into electric energy

Example : The solar cells.

The benefits of the solar cell

1. It changes light (solar) energy into electric energy, that is used in houses.
2. It provides the satellites with electric energy to operate their pieces of equipment.



Solar cells

electric generator	المولد الكهربى	provide	يمد / يزود	satellites	أقمار صناعية
loudspeakers	السماعات	solar cells	الخلايا الشمسية	operate	يُشغل
engine	محرك / موتور				

B Changing light energy into heat energy

Example : The solar heater.

The solar heater changes the sunlight (light energy) into heat energy.


Solar heater


Activity 4

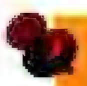
To prove that light energy changes into heat energy.



Steps	Figure	Observation
1. Put the magnifying (convergent) lens over the paper at a few centimetres. 2. Expose the lens to the Sun rays to focus these rays at a point of paper.		The piece of paper will heat up and it may burn if it is exposed to the Sun rays for a long period of time.


Conclusion:

Light energy changes into heat energy.


NOTE

In a battery (dry cell), chemical energy changes into electric energy.



heat up	يسخن	convergent lens	عدسة مجمعة
focus	يركز / يُسلط	solar heater	السخان الشمسى

Remember



- Energy is the ability to do work.
- **The following table shows the changes of energy from one form to another in many equipments :**

Equipment	Used energy	Produced energy	Equipment	Used energy	Produced energy
Electric fan :	Electric	Kinetic	Electric motor	Electric	Kinetic
Electric lamp :	Electric	Light	Violin	Kinetic	Sound
Electric heater :	Electric	Heat	Solar cell	Light	Electric
Radio :	Electric	Sound	Solar heater	Light	Heat
Dynamo :	Kinetic	Electric	Battery	Chemical	Electric

- - By **increasing** work, the stored potential energy **increases** and vice versa.
  - Rubbing your hands, hammering on a piece of iron and removing a nail from a piece of wood are examples on changing **kinetic energy into heat energy**.
- **The solar cell is necessary, because :**
  - It changes light energy into electric energy that is used in houses.
  - It provides the satellites with the electric energy to operate their pieces of equipment.

Try to answer
Worksheet 10 in the Notebook.

Questions on lesson one



Questions signed by 📖 have been taken from the school book.

1. Choose the correct answer :

1. To go up the stairs, you need ....
   a. energy. b. to do work.
   c. to wear heavy clothes. d. (a) and (b).

2. .... is (are) form(s) of energy.
   a. Potential energy b. Heat energy
   c. Electric energy d. (a) , (b) and (c)

3. The energy produced by rotating the spring of a toy car is ....
   a. potential energy. b. heat energy.
   c. light energy. d. chemical energy.

4. The energy produced by the piano is the ....
   a. potential energy. b. chemical energy.
   c. electric energy. d. sound energy.

5. The electric energy is produced by the ....
   a. dry cell (battery). b. piano.
   c. electric lamp. d. electric fan.

6. .... is the energy produced from the electric fan.
   a. Kinetic energy b. Light energy
   c. Electric energy d. Heat energy

7. Radio produces .... energy.
   a. light b. sound c. potential d. heat

8. Sound is a form of ....
   a. mass. b. speed. c. energy. d. motion.

9. The vibration of objects produces .... energy.
   a. light b. heat c. sound d. electric

10. Potential energy changes into kinetic energy in the ....
    a. solar cells. b. dynamo.
    c. spring of the childrens' toys. d. electric fan.

11. Kinetic energy can be changed into ....
    a. sound energy. b. heat energy.
    c. electric energy. d. (a) , (b) and (c).

LESSON 1

12. Kinetic energy changes into sound energy in ....
   a. violin.
   b. knocking on the door.
   c. the electric fan.
   d. (a) and (b).

13. In the guitar, ...
   a. kinetic energy changes into sound energy.
   b. kinetic energy changes into heat energy.
   c. potential energy changes into kinetic energy.
   d. light energy changes into heat energy.

14. On rubbing your hands together, ... energy is produced.
   a. heat
   b. light
   c. kinetic
   d. electric

15. In the dynamo, kinetic energy changes into ....
   a. electric energy.
   b. light energy.
   c. heat energy.
   d. potential energy.

16. Kinetic energy changes into electric energy in the ....
   a. solar cells.
   b. dynamo of a bicycle.
   c. electric lamp.
   d. washing machine.

17. The energy used in the washing machine and the electric lamp is ....
   a. electric energy.
   b. heat energy.
   c. sound energy.
   d. potential energy.

18. In the solar heater, ...
   a. light energy changes into electric energy.
   b. light energy changes into heat energy.
   c. potential energy changes into kinetic energy.
   d. kinetic energy changes into electric energy.

19. In the solar heater and solar cells, the energy used is ....
   a. light energy.
   b. electric energy.
   c. potential energy.
   d. kinetic energy.

20. Light energy changes into electric energy in the ....
   a. solar cells.
   b. solar heater.
   c. electric lamp.
   d. electric fan.

21. .... is (are) among the benefits of the solar cells.
   a. Providing the satellites with electric energy
   b. Generating electric energy that is used in homes
   c. Changing kinetic energy into electric energy
   d. (a) and (b)

2. Put (✓) in front of the correct statement and (×) in front of the wrong one , then correct it :

1. Force is the ability to do work. ( )
2. Energy stored in the spring of a toy is kinetic energy. ( )
3. Energy produced from the solar heater is electric energy. ( )
4. Energy produced from the radio is sound energy. ( )
5. Heater has the ability to do work. ( )
6. Light is a form of energy that reaches ear causing hearing. ( )
7. 📖 Sound stops when the vibration of a tuning fork stops. ( )
8. Sound is produced from the vibration of objects. ( )
9. 📖 On filling the spring of a toy car, kinetic energy changes into potential energy. ( )
10. On knocking on the door, kinetic energy changes into light energy. ( )
11. The energy produced from the violin and the dynamo is sound energy. ( )
12. Sound energy changes into kinetic energy by rubbing your hands. ( )
13. Kinetic energy changes into sound energy, heat energy and electric energy. ( )
14. Electric energy changes into light energy in the electric lamp. ( )
15. When the Sun rays fall on a lens that was put over a paper for a long time, the paper is burned. ( )
16. Generating electric energy, that is used in homes is from the benefits of the solar heater. ( )

3. Correct the underlined words :

1. Energy is the ability to do <u>force</u>. (..................)
2. Light energy changes into <u>kinetic energy</u> in the solar heater. (..................)
3. Energy produced by the electric fan is <u>potential energy</u>. (..................)
4. <u>Light</u> is produced from vibration of objects. (..................)
5. In the motor, <u>sound</u> energy changes into kinetic energy. (..................)
6. <u>In the electric fan</u> , electric energy changes into light energy. (..................)
7. <u>In the solar cells</u> , light energy changes into heat energy. (..................)
8. In the electric heater, electric energy changes into <u>chemical energy</u>. (..................)

LESSON 1

4. Write the scientific term of each of the following :

1. It is the ability to do work. (..................)
2. The energy stored in the spring of a toy car. (..................)
3. Energy produced from the piano. (..................)
4. Energy produced from the dry cells. (..................)
5. Energy produced from the solar heater. (..................)
6. Energy produced from the electric fan. (..................)
7. Energy produced from the electric lamp. (..................)
8. The form of energy, that reaches ear causing hearing. (..................)
9. The form of energy, that is produced from the vibration of objects. (..................)
10. The equipment, that changes kinetic energy into sound energy. (..................)
11. The form of energy, that changes into heat energy, when rubbing your hands together. (..................)
12. Energy used in the dynamo and the violin. (..................)
13. Energy produced from the dynamo. (..................)
14. Energy produced from rubbing your hands together. (..................)
15. Energy used in solar cells and solar heater. (..................)

5. Complete the following statements :

1. Energy is the ability to do ....
2. .... , ... and .... are forms of energy.
3. The spring of the children's toy stores .... energy.
4. The electric lamp produces .... energy, while the washing machine produces .... energy.
5. .... is the energy produced by the heater, while .... is the energy produced by radio.
6. .... is the energy produced by the dry cells.
7. .... is a form of energy that reaches ear causing hearing.
8. Sound originates due to ....
9. When the tuning fork vibrates, it produces ....
10. When you rotate a spring of a toy, then leave it, ... energy changes into .... energy.

11. In the violin, kinetic energy changes into .... energy, but when you rub your hands together, ... energy changes into .... energy.
12. In the guitar, ... energy changes into .... energy.
13. When hammering on a piece of iron, ... energy changes into .... energy.
14. .... energy changes into .... energy during knocking on the door.
15. .... energy changes into .... energy by dynamo.
16. 📖 In the electric lamp, electric energy changes into .... energy.
17. 📖 In the motor of the car, electric energy changes into .... energy.
18. In the motor of a washing machine, electric energy changes into .... energy.
19. Electric energy is changed into kinetic energy in .... and ....
20. 📖 We get .... energy from the solar cells.
21. In the solar heater, ... energy changes into .... energy.
22. In the solar cells, light energy changes into .... energy.
23. In the battery, ... energy changes into .... energy.
24. 📖 Light energy changes into electric energy in ....

6. Give reasons for the following :

1. 📖 You hear a sound when you tap a tuning fork.
....
2. 📖 When you ride a bicycle, some changes of energy happen.
....
....
3. On hammering a piece of iron, it becomes hot.
....
4. To move the children's toys, you must rotate the spring.
....
5. You feel warm when you rub your hands together.
....
6. The dynamo in the bicycle must touch the wheel.
....
7. The electric fan rotates during passing the electric current.
....

LESSON 1

8. The solar cell is useful.

....

....

9. Satellites are provided with solar cells.

....

10. 📖 On removing a nail from a wooden rod, the nail becomes warm.

....

7. What happens when...?

1. 📖 The Sun rays fall on a lens that is put over a piece of paper.

....

2. 📖 A piece of fixed rubber band is pulled, then it is left.

....

3. 📖 Tap a tuning fork on a wooden table.

....

4. 📖 Pulling the free end of a vertically hanged spring then leaving it free.

....

....

5. 📖 Rub your hands together.

....

6. You remove a nail from a wooden plate and why ?

....

7. You switch on an electric lamp (according to change of energy).

....

8. You switch on an electric fan (according to change of energy).

....

9. 📖 Exposing a solar cell to the Sun.

....

8. What is the form of energy that is produced from...?

1. Rotation of the dynamo. (..................)
2. 📖 Knocking on the door of a classroom. (..................)
3. 📖 Lighting of an electric lamp. (..................)
4. Rotating a spring of a toy car. (..................)
5. The violin and the guitar. (..................)
6. 📖 Rubbing your hands together. (..................)
7. Operating the electric motor. (..................)
8. Solar heater. (..................)

9. Solar cells. (..................)
10. 📖 Ringing of a school bell. (..................)
11. 📖 Pulling of a string (rubber band). (..................)
12. 📖 Running of a pupil. (..................)

9. Mention the changes of energy in the following cases :

1. A moving bicycle containing a dynamo and a lamp : ....
2. Radio : ....
3. Electric motor : ....
4. 📖 Operating the electric fan : ....
5. 📖 Lighting of an electric lamp in your classroom : ....
6. The violin : ....
7. Solar heater : ....

10. 📖 The opposite figures show two similar springs (A) and (B). Spring (A) is pressed by a little degree and fixed in its place, and the spring (B) is pressed by a larger degree and fixed in its place.


Normal spring


(A)


(B)

1. What is the name of the energy stored in each spring ?
....
2. What is the spring that store a larger amount of energy ?
....

11. What is meant by ... ?

1. Energy.
....
2. 📖 Sound.
....

12. Mention the function of :

1. The Dynamo.
....
2. The motor.
....
3. The solar cell.
....

LESSON 1

13. Match :

(A)		(B)
1. It changes light energy into heat energy.	a.	
2. It changes kinetic energy into sound energy.	b.	
3. It changes chemical energy into electric energy.	c.	
4. It changes electric energy into light energy.	d.	
5. It changes potential energy into kinetic energy.	e.	
6. It changes kinetic energy into heat energy.	f.	
7. It changes electric energy into kinetic energy.	g.	

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....
7. ....

Timss Questions



1. Look at the following figures, then mention the changes of energy on rotating the spring then on leaving the spring free.





On rotating the spring:

....

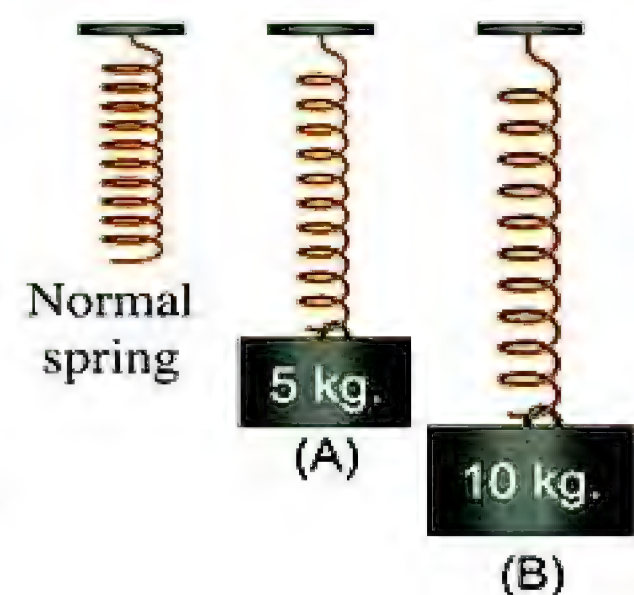
....

On leaving the spring free:

....

....

2. The opposite figures show two similar springs (A) and (B). A weight was hung on the end of each one, then fixed as shown in the figure. Answer the following questions :



1. What is the name of energy that is stored in each spring ?

....

2. Which spring stores more energy ?

....

3. What happens if each of them is left free ?

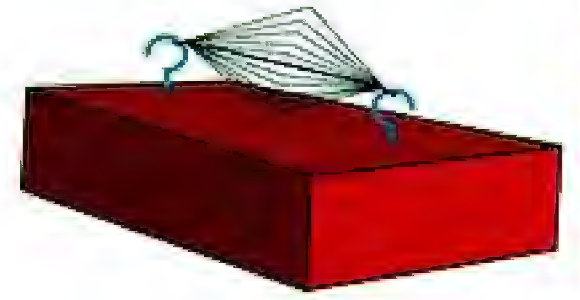
....

....

LESSON 1

3. **Look at the opposite figure, then answer :**

In the opposite figure, ... energy changes into .... due to .... of the rubber band.



4. **Look at the opposite figure, then complete the following sentences :**

1. In a bicycle, there is a small piece of equipment called the .... that touches the wheel and changes the .... energy of the wheel into .... energy causing the lighting of the lamp.



2. On increasing the speed of the bicycle, the light of the lamp ....

LESSON 2

The electricity

- *Electricity is a clean form of energy.*

Most of the devices around us work by electricity as

Computer



Television



Refrigerator



- Electricity is produced from electric charges which are electric bodies carry **positive** charge (+ve) or **negative** charge (−ve).
- When the electric charges **remain** on an object, **static electricity** is produced.
- When the electric charges **flow** through a wire, **current (dynamic) electricity** is produced.

So kinds of electricity are

1. **Static electricity**
2. **Current (Dynamic) electricity**

static electricity	الكهرباء الساكنة	current (dynamic) electricity	الكهرباء التيارية	positive	موجب
electric charges	شُحنات كهربية	negative	سالب	refrigerator	ثلاجة

LESSON 2

1 Static electricity

Static electricity

It is a type of electricity, that is formed from electric charges that remain on an object.

Static electricity generation



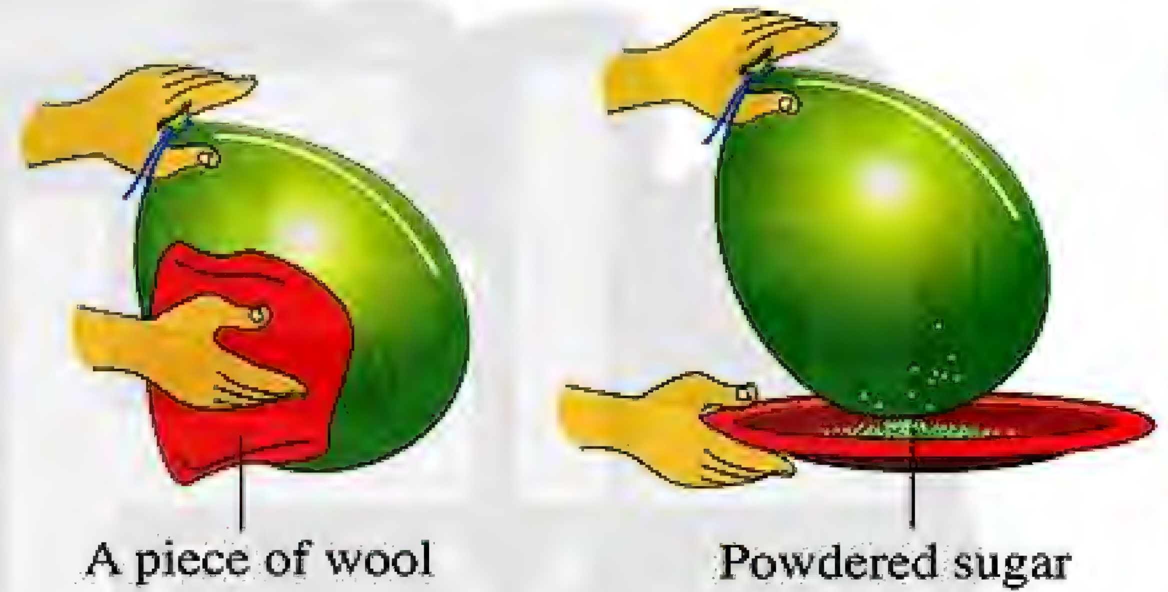
Static electricity is generated by rubbing objects.



Activity 1 To prove that rubbing of a balloon generates static electricity.

Steps:

1. Blow a balloon and tie its opening with a thread.
2. Rub the inflated balloon by a piece of wool.
3. Get the balloon close to the powdered sugar.



Observation:

The balloon attracts the powdered sugar.

Explanation:

On rubbing the balloon by the piece of wool, the electric charges are formed on its surface, so it attracts the powdered sugar.

Conclusion:

Rubbing of objects generates static electricity.

wool	صوف	thread	خيط	inflated balloon	بالون منفوخ
rubbing	تدليك	attract	ينجذب	powdered sugar	سكر مطحون



Activity 2 To prove that rubbing of a ruler generates static electricity.

Steps	Figures	Observations
1. Close the plastic ruler to small bits of paper.		- The small bits of paper are not attracted to the ruler.
2. Rub the ruler with your hair several times, then close it to the bits of paper.		- The small bits of paper are attracted to the ruler.

Explanations:

- Before rubbing the ruler, there are no electric charges on the ruler.
- After rubbing the ruler with your hair, the electric charges are formed on the ruler, so it attracts the paper bits.

Conclusion:

Rubbing of objects generates static electricity.

G.R.

The attraction of a rubbed balloon to a wall.

Because the rubbed balloon has electric charges, that are attracted to the wall.

Question

Complete the following :

1. .... is a clean form of energy.
2. The two types of electricity are ...., and ....
3. .... is the type of electricity, that is formed from electric charges that remain on an object.

bits of paper قصاصات ورقية

LESSON 2

Some phenomena related to the static electricity

1 **The vision of light in the sky that is called "lightning".**



2 **Standing of your hair during combing it with a plastic comb.** G.R.

Because when rubbing your hair with a comb, the electric charges are formed on the comb and make your hair attracted to the comb.



3 **Hearing sound when putting off your clothes.** G.R.

Due to the formation of electric charges when parts of your body are rubbed by the clothes.



In all the previous phenomena, electric charges are formed and become stable on the bodies.



Read and learn

Formation of lightning in the sky :

1. There are two types of electric charges, which are :
   ❶ positive charges (+ve). ❷ negative charges (-ve).
2. Lightning happens when positive electric charges found in clouds meet with negative electric charges rising from the Earth.

phenomena	ظواهر	lightning	البرق	putting off	خلع
related	مرتبطة بـ	rising	المتصاعدة	combing	تمشيط
vision	رؤية	standing	وقوف	comb	مشط

2 Current (Dynamic) electricity

Current electricity :

It is a type of electricity, that is formed from the electric charges that flow through connecting wires for long distances forming the electric current.

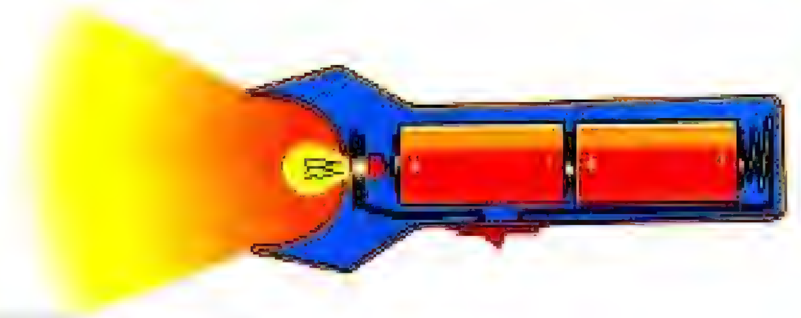


Activity 3 To know what the electric current is.



Tools:

A pocket torch – two batteries for torch.





Step:

Put the batteries inside the torch, then turn it on :



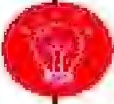
Observation:

The lamp of the torch lights



Explanation:

The battery contains electric charges and it pushes them through the wires of the torch to light its lamp.



Conclusion:

The electric current (current electricity) is movable electric charges.



NOTE

When the electric current flows through a wire in one direction, it is called a direct current.

To obtain electric current or dynamic electricity, we need to form an electric circuit.

flow	سريان	electric current	التيار الكهربى	movable electric charges	شحنات كهربية متحركة
connecting wires	أسلاك موصله	electric circuit	دائرة كهربية	direct current	تيار مباشر
pocket torch	كشاف جيب	one direction	اتجاه واحد		

LESSON 2

The electric circuit

The electric circuit is composed of :

1. A battery.
2. A lamp.
3. Connecting wires.
4. Electric switch (key).



Activity 4 To form a model of an electric circuit.



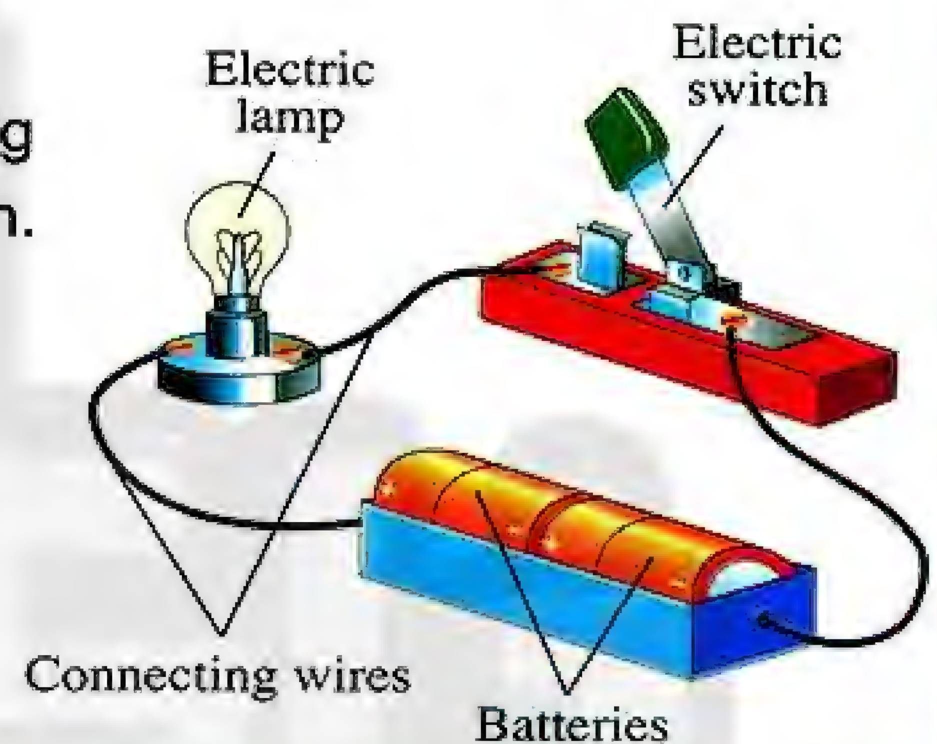
Tools:

A battery – a lamp with a base – connecting wires with uncovered ends – electric switch.



Steps:

1. Set up an electric circuit as shown in the opposite figure.
2. Apply the following steps, then record your results in the following table.



Steps	Figures	Results (state of lamp)	
		Lights	Does not light
a. Close the circuit by closing the switch.		✓	
b. Open the circuit by opening the switch.			✓
c. Remove the battery from the circuit, then close the switch.			✓

electric switch (key) مفتاح كهربى set up كون uncovered ends نهايات مكشوفة apply ينفذ / يطبق



Conclusion:

1. The electric circuit contains :
   a. **Battery,** that is the source of the electric current.
   b. **Electric switch (key),** that is used to close and open the circuit.
   c. **Connecting wires** that :
      - Used to connect all the circuit components together.
      - Transfer the electric current from the battery to lamp.
2. To obtain an electric current, the electric circuit must be closed.

The electric circuit :

It is the closed path of the electric current.



The electric circuit must contain a battery.

Because it is the source of the electric current.



Attention

Don't use home electricity in doing the previous activity, because the electric current at home has high power, that may cause death.



Read and learn

Some inventors of the electric equipment :

- **Marconi :**
  • He was born in Bologna in (1874).
  • He is the inventor of the radio.
- **John Logie Baird :**
  • He was born in Great Britain in (1888 – 1946).
  • He is the inventor of the television.
- **Volta :**
  He is the first inventor who generates the electric current in (1800).

closed path	مسار مغلق	circuit components	مكونات الدائرة	high power	طاقة عالية	inventors	مخترعون

LESSON 2

Methods of decreasing (rationalizing) the consumption of electricity

1

Using the solar cells to produce electricity from the solar energy.



2

Turning off the lamps when leaving a place.



3

Turning off all the unused equipment.





Try to answer

- Worksheet 11
- General exercise of the school book on Unit 2
- Model Exams on Unit 2

in the Notebook.

rationalizing	ترشيد	turning off	إطفاء	unused	غير مستعملة
consumption	إستهلاك				

Remember



Comparison between static electricity and dynamic electricity :

Points of comparison	Static electricity	Dynamic electricity
Definition :	It is the type of electricity, that is formed from electric charges that remain on an object.	It is a type of electricity, that is formed from the electric charges that flow through connecting wires for long distances forming electric current.
Method of generation :	Rubbing.	Electric circuit.
Examples :	• Vision of lightning in the sky. • Hearing a sound when you put off your clothes. • Standing of your hair when you comb it by a plastic comb.	The current, that is used to operate a heater, a refrigerator, a television and a computer.

- **The electric circuit :** It is the closed path of the electric current.
- The electric circuit is composed of **a battery**, **a lamp**, **connecting wires** and **an electric switch (key)**.
- **Methods of decreasing the consumption of electricity :**

1. Using the solar cells to produce electricity from the solar energy.
2. Turning off the lamps when leaving a place.
3. Turning off all the unused equipment.

Questions on lesson two



Questions signed by 📖 have been taken from the school book.

1. Choose the correct answer :

1. There are two types of electricity, which are ....
   a. static and thermal electricity.
   b. dynamic and thermal electricity.
   c. light and heat energy.
   d. static and current electricity.
2. Static electricity is produced from ....
   a. flow of electric charges in wires.
   b. rubbing your hair by a plastic ruler.
   c. putting a battery inside a torch.
   d. (a) and (c).
3. Lightning that occurs in the sky is a phenomenon related to ....
   a. static electricity.
   b. dynamic electricity.
   c. potential energy.
   d. kinetic energy.
4. Rubbing the ruler in your hair ....
   a. generates static electricity.
   b. attracts the small bits of paper.
   c. produces electric charges on it.
   d. all the previous answers.
5. The reason for attracting the powdered sugar to the rubbed balloon is ....
   a. the formation of electric charges on the balloon.
   b. the colour of the balloon.
   c. the formation of salty powder.
   d. all the previous answers.
6. .... is the electric charges, that flow through connecting wires for long distances.
   a. Current electricity
   b. Static electricity
   c. Electric circuit
   d. (a) or (c)
7. To make an electric circuit, we need ....
   a. a key and a lamp.
   b. connecting wires.
   c. a battery.
   d. all the previous answers.
8. Key is used to ....
   a. close the electric circuit only.
   b. open the electric circuit only.
   c. cut the electric wires.
   d. (a) and (b).
9. .... is the source of the electric charges in the electric circuit.
   a. The electric switch
   b. The battery
   c. The electric wire
   d. The electric lamp

10. The closed path of the electric current is called ....
   a. electric current.
   b. battery.
   c. electric circuit.
   d. switch.

2. Put (✓) in front of the correct statement and (×) in front of the wrong one, then correct it :

1. The only type of electricity is the static electricity. ( )
2. Lightning in the sky is a phenomenon related to static electricity. ( )
3. Static electricity is a type of electricity that is produced due to the remaining of the electric charges on a body. ( )
4. The current electricity can be generated by rubbing an inflated balloon with a piece of wool. ( )
5. The electric wires are the sources of the electric current. ( )
6. Small bits of paper are attracted to a rubbed plastic ruler. ( )
7. The direct current is the electric current, that flows in a wire in two directions. ( )
8. The electric switch is used to close the electric circuit only. ( )
9. A battery and connecting wires are only the components of the electric circuit. ( )
10. The connecting wires are used to transfer the electric current from the battery to the lamp. ( )
11. To rationalize (decrease) the consumption of electricity, we must turn off the lamps when leaving a place. ( )

3. Correct the underlined words :

1. Dynamic electricity is produced due to the remaining of electric charges on a body. (..................)
2. Rubbing of objects generates dynamic electricity. (..................)
3. Static electricity is movable electric charges. (..................)
4. Current electricity is produced due to the flow of electric circuit through connecting wires. (..................)
5. The electric current flows in one direction in a wire is called static electricity. (..................)
6. The switch is the source of the electric current. (..................)
7. To transfer the electric current from the battery to a lamp, we can use a battery. (..................)

LESSON 2

8. Heater, television and refrigerator are operated by water. (..................)
9. To decrease the consumption of electricity, we must turn on all the unused equipment. (..................)

4. Write the scientific term of each of the following :

1. The type of electricity, that is formed from electric charges that remain on an object. (..................)
2. The type of electricity which can be formed by rubbing. (..................)
3. Electricity, which causes the standing of hair during combing it with a plastic comb. (..................)
4. It is the electric charges, that flow through connecting wires for long distances forming the electric current. (..................)
5. The electric current, that flows through the wire in one direction. (..................)
6. A battery, a lamp, an electric switch and connecting wires. (..................)
7. A closed path of the electric current. (..................)
8. The source of the electric current in the electric circuit. (..................)
9. The tool that is used to close and open the electric circuit. (..................)
10. They are used to transfer the electric current from battery to lamp. (..................)
11. They are used to connect all the circuit components together. (..................)

5. Complete the following statements :

1. .... is a clean form of energy.
2. The two types of electricity are .... and ....
3. .... is the type of electricity, that is formed from electric charges that remain on an object.
4. Lightning in the sky is a phenomenon related to the ....
5. Hearing a sound on putting off your clothes is due to ....
6. .... is from the methods that is used to generate static electricity.
7. The .... can be formed on a balloon rubbed with a piece of wool.
8. Rubbing the objects generates ....
9. The flow of the electric charges through conductors produces .... electricity.
10. .... is an electric current, that flows in one direction.

11. To obtain the electric current, we need to form ....
12. Lamp, ... , connecting wires and .... are the components of the electric circuit.
13. .... is the closed path of the electric current.
14. The .... is the source of the electric current in the electric circuit.
15. .... is used to close and open the electric circuit.
16. The .... are used to connect all the different components of the electric circuit together.
17. The connecting wires are used to transfer the .... from .... to the lamp.
18. Refrigerator, television and computer are pieces of equipment, that are operated by ....

6. Give reasons for the following :

1. Sometimes your hair stands when you comb it by a plastic comb.
....
2. Attraction of small bits of paper to a ruler rubbed by your hair.
....
3. The attraction of a rubbed balloon to a wall.
....
4. Hearing a sound when you put off your clothes.
....
5. The balloon becomes charged after rubbing.
....
6. • Battery is a main part in the electric circuit.
   • The importance of the battery in the electric circuit.
....
7. Don't use the electric current of home when you perform an activity.
....
8. Electricity is very important in our life.
....
9. The presence of electric switch in the electric circuit.
....

LESSON 2

7. What happens when ... ?

1. Rubbing your hair with a comb.
....
2. Getting a ruler rubbed with a piece of wool close to small bits of paper.
....
3. Cutting off the electric current of your home for one day.
....
4. Rubbing a plastic ruler with a piece of wool.
....
5. Rubbing an inflated balloon with a piece of wool, then getting it close to your hair.
....
6. Removing a battery from a closed electric circuit.
....
7. Getting the charged balloon close to a wall.
....
8. The electric switch is absent from the electric circuit.
....

8. Suggest a way to decrease the consumption of electricity.
....

9. What is meant by ... ?



1. Static electricity :
....
2. Current (Dynamic) electricity :
....
....
3. The electric circuit :
....

10. What is the function of ... ?

1. Battery in electric circuit :
....

2. Connecting wires :

....

....

3. Electric switch (key) :

....

11. Compare between the static electricity and dynamic electricity.

....

....

....

12. The following figure represents an electric circuit.

Complete :

❶ ....

Its function : ....

❷ ....

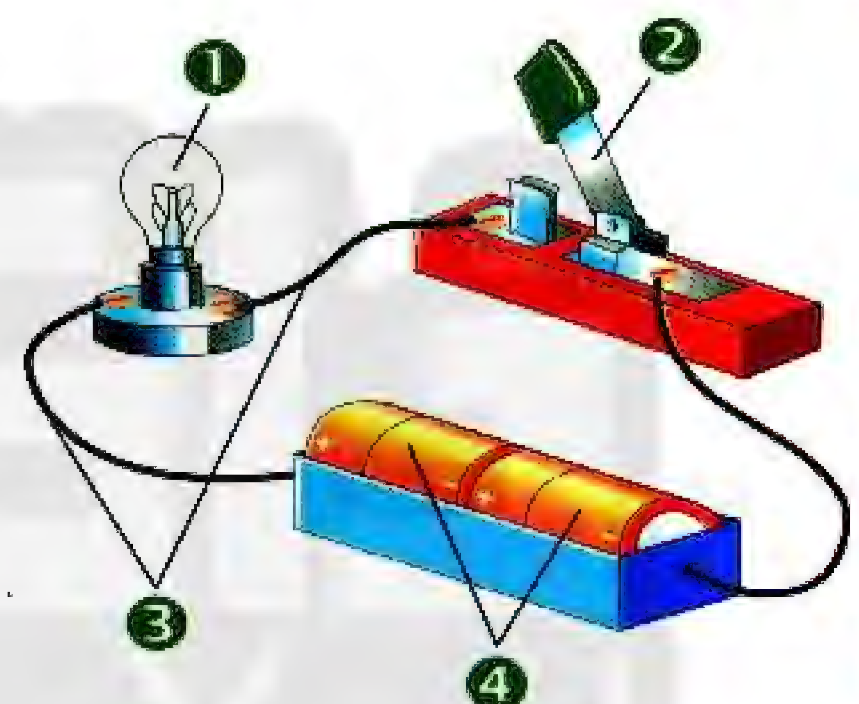
Its function : ....

❸ ....

Their function : ....

❹ ....

Its function : ....

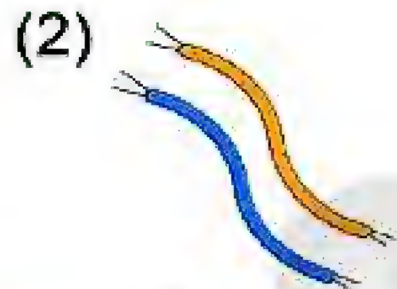


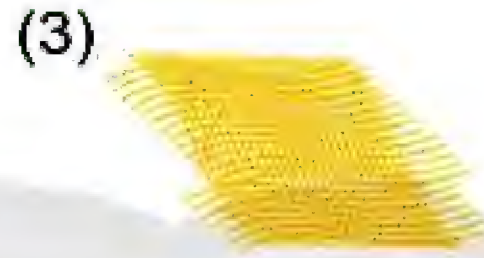
Timss Questions



1. Examine the following figures, then answer :

(1) 
Electric lamp

(2) 
Copper wires

(3) 
A piece of wool

(4) 
A battery

(5) 
A balloon

A. Which of them can be used together to make an electric circuit ? ....

a. (1) , (3) and (4). b. (1) , (2) and (4).
c. (1) , (2) and (3). d. (1) , (4) and (5).

B. Which of them can be used together in generating static electricity ? ....

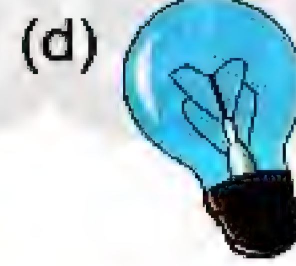
a. (2) and (1). b. (3) and (2). c. (3) and (4). d. (3) and (5).

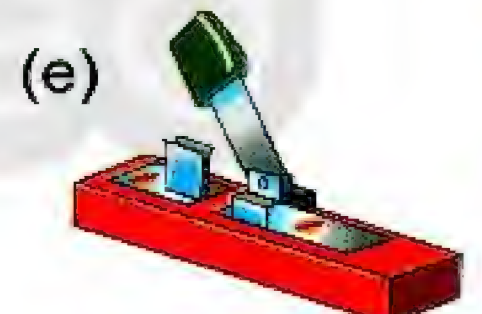
2. Look carefully at the following pictures, then use their letters to answer the following questions :

(a) 
Balloon

(b) 
Batteries

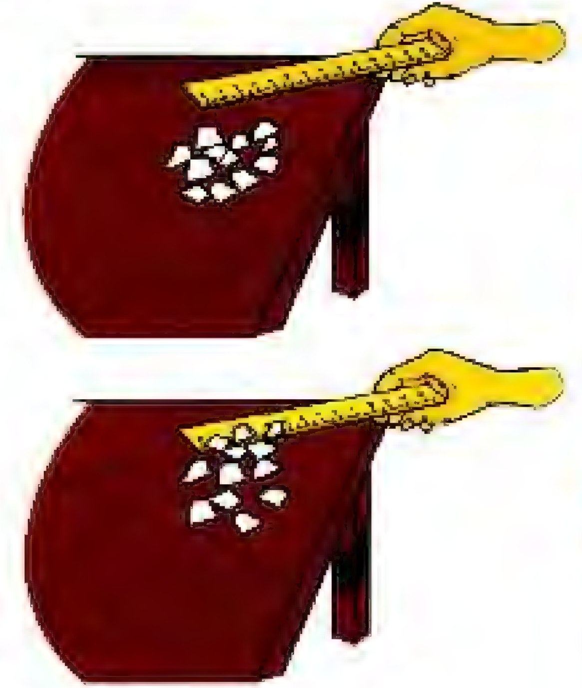
(c) 
Wires

(d) 
Electric lamp

(e) 
Electric switch

1. Choose one item which is used as a source of electricity. (..................)
2. One item attracts bits of paper when it is rubbed. (..................)
3. A group of items, that can form an electric circuit. (..................)
4. One item which is used to open and close the electric circuit. (..................)
5. They are used to transfer the electric current through the electric circuit. (..................)

3. Look at the opposite figure, then complete the following sentences :



1. After rubbing the ruler, the .... are formed on the ruler, so it .... the paper bits.

2. Rubbing of objects generates ....

Unit 1 Lesson 1

Test yourself 1

25

Good / Very Good / Excellent

Answer each of the following questions :

1 Complete the following sentences : *(5 marks)*

1. .... system helps the body to get rid of harmful substances.
2. .... , ... and .... are the digestive canal supplementaries.
3. .... is secreted by the salivary glands and it changes .... into ....
4. The number of teeth is .... in the adult person.
5. Saliva contains some digestive substances which are called .... and help in digestion of ....

2 Write the scientific term : *(5 marks)*

1. The organ that mixes food with saliva. (..................)
2. The process of changing food from a complex form into simple substances to let the body gets benefit from them. (..................)
3. The system that distributes the digested food and oxygen gas all over the body cells. (..................)
4. The teeth that grind food to make the swallowing easy. (..................)
5. The building unit in the body of the living organism. (..................)

3 [A] Choose from column (B) what suits in column (A) : *(5 marks)*

(A)	(B)
1. Salivary glands	a. mix food with saliva in mouth.
2. Digestive canal	b. secrete saliva.
3. Incisors and canines	c. grind the food.
4. Reproductive system	d. starts with mouth and ends with anus.
	e. cut and tear food.
	f. produces new individuals who look like us.

1. .... 2. .... 3. .... 4. ....

(B) What is the function of ... ?

1. Molars : ....
2. Saliva : ....
3. Nervous system : ....

Test yourself

4 (A) What happens if ... ? *(5 marks)*

1. There is no saliva secreted in the mouth.

....

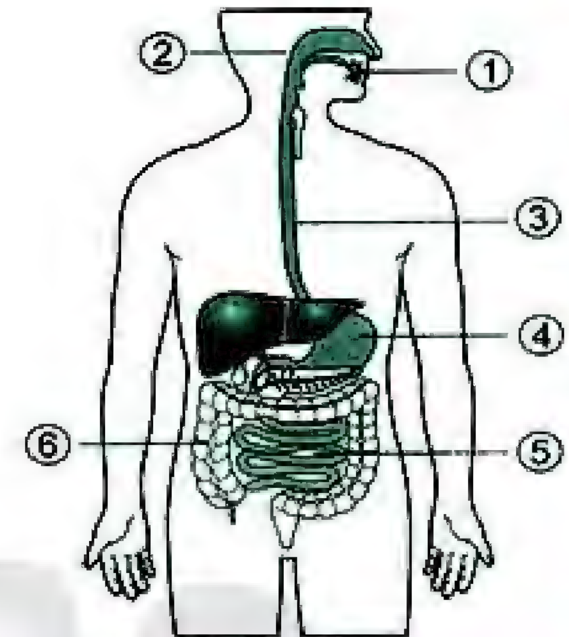
....

2. The urinary system cannot perform its function.

....

....

(B) Label the following figure :



① .... ② ....

③ .... ④ ....

⑤ .... ⑥ ....

5 (A) Give reasons for : *(5 marks)*

1. When we chew a piece of bread well, its taste becomes sweety.

....

....

2. Food must be digested into simpler substances.

....

....

3. Teeth are different in their kinds.

....

....

(B) Rearrange the following organs to form the digestive canal :

(start with mouth)

(Stomach - Pharynx - Small intestine - Mouth - Esophagus - Large intestine).

....

....

Unit 1 Lesson 1

Test yourself 2

25

Good
Very Good
Excellent

Answer each of the following questions :

1 Write the scientific term : *(5 marks)*

1. The organ that secretes the gastric juice. (....................)
2. The part of the digestive system at which the intestinal juice is poured. (....................)
3. The part of the digestive system at which the water from the food remains is absorbed. (....................)
4. The juice that makes an incomplete digestion of proteins. (....................)
5. The common cavity leads to esophagus and trachea. (....................)

2 Complete the following statements : *(5 marks)*

1. Digestion of proteins starts in .... and is completed in ....
2. .... is secreted by pancreas, while .... is secreted by liver.
3. Fats are digested by the effect of ...., while protein is digested by the effect of ....
4. In the digestive system, food undergoes two processes which are .... and ....
5. .... is the first part of the small intestine, where the bile juice and the .... juice are poured.

3 (A) Give reasons for : *(5 marks)*

1. You must not eat fast food.

....

2. Small intestine is a very important organ.

....

....

3. Liver is very important in the digestion of fats.

....

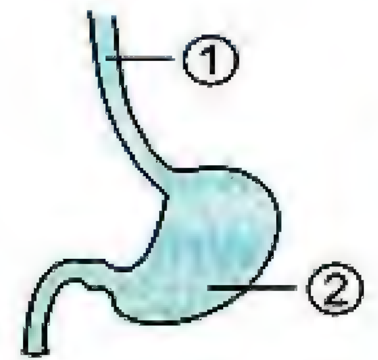
(B) Follow the journey of a piece of meat to be digested and absorbed :



....

....

4 **(A) Look at the following figure, then answer the following :** *(5 marks)*



1. Label the organ ① and ②.

....

2. Mention the function of organ ①.

....

3. Mention the digestive juice that is secreted in organ ②.

....

(B) What is meant by digestive enzymes ?

....

(C) What happens if the small intestine consists of duodenum only ?

....

---

5 **Choose the correct answer :** *(5 marks)*

1. .... is a muscular tube that allows food to pass from pharynx to stomach.
   a. Small intestine b. Tongue
   c. Esophagus d. Stomach
2. .... is responsible for incomplete digestion of proteins.
   a. Stomach b. Large intestine
   c. Heart d. Molar
3. .... is the longest part of the digestive system.
   a. Tongue b. Salivary gland
   c. Anus opening d. Small intestine
4. A piece of fat is digested in ....
   a. small intestine. b. stomach.
   c. mouth. d. large intestine.
5. All the following are advises to keep the digestive system healthy except ....
   a. chew the food well. b. buy food from street sellers.
   c. don't eat food contains large amounts of fats.
   d. don't eat food contains flavour additives.

Unit 1 Lesson 2

Test yourself 3

25

Good
Very Good
Excellent

Answer each of the following questions :

1 Write the scientific term : *(5 marks)*

1. It is the process by which the living organism obtains energy from the digested food. (....................)
2. The organ that is lined with mucus, hair and blood capillaries. (....................)
3. The common cavity between the digestive system and the respiratory system. (....................)
4. The respiratory tube that is supported by incomplete cartilaginous rings. (....................)
5. A muscle that separates the thoracic cavity from the abdominal cavity. (....................)

2 (A) What is the function of each of the following : *(5 marks)*

1. Nose.
....
....
2. Epiglottis.
....
3. Cilia in trachea.
....

(B) Give reasons for :

1. Food doesn't enter the respiratory system during swallowing.
....
2. The respiration process is very important.
....
....

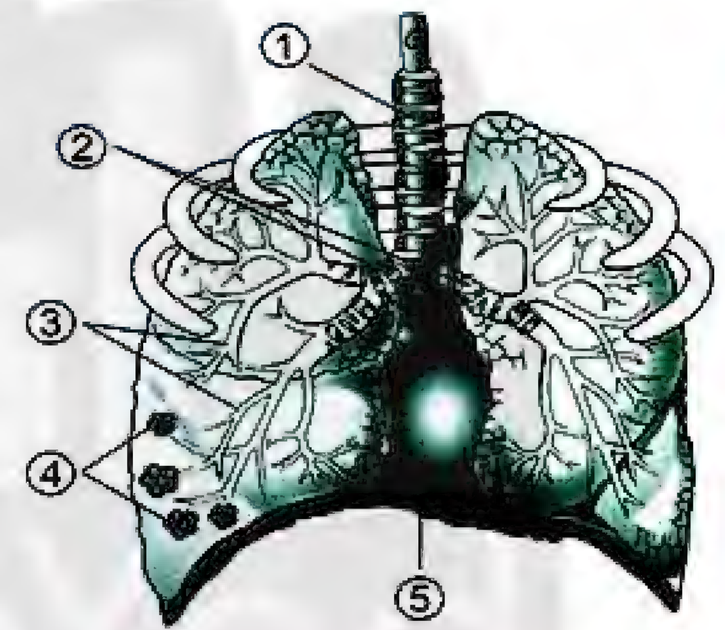
3 Choose the correct answer : *(5 marks)*

1. The respiration process depends mainly on the .... gas.
   a. oxygen b. carbon dioxide
   c. hydrogen d. water vapour
2. All the following exist in the nose except ....
   a. hair. b. blood capillaries.
   c. mucus. d. cilia.

3. The organ which found in both of respiratory system and digestive system is ....
   a. mouth. b. larynx. c. pharynx. d. lungs.
4. All the following organs are related to the respiratory system except ....
   a. liver. b. diaphragm.
   c. lungs. d. trachea.
5. .... are air sacs, where the gases exchange occurs.
   a. Two lungs b. Alveoli
   c. Epiglottis and trachea d. Bronchioles

4 Look at the following figure, then answer the questions : *(5 marks)*

1. Label the figure.
   ① .... ② ....
   ③ .... ④ ....
   ⑤ ....



2. What is the function of part no. ④ ?
   ....
3. What is meant by respiration process ?
   ....

5 (A) What happens if ... ? *(5 marks)*

1. The walls of alveoli and blood capillaries are thick.
   ....
2. There are no mucus and hair in the nose.
   ....

(B) Complete the following statements :

1. .... separates between thoracic chest cavity and abdominal cavity.
2. .... is a cartilaginous tube.
3. .... occupies the thoracic cavity, where .... is one of its organs that is a common cavity leads to esophagus and trachea.

Unit 1 Lesson 2

Test yourself 4

25

Good Very Good Excellent

Answer each of the following questions :

1 Choose the correct answer : *(5 marks)*

1. The air rich in carbon dioxide gas and water vapour goes out from the two lungs during ....
   a. inhalation process. b. exhalation process.
   c. digestion process. d. circulation process.
2. The alveoli have .... walls to permit the exchange of gases.
   a. thick b. very thin c. very thick d. no
3. The ribs rise upwards and the thoracic cavity enlarges during ....
   a. exhalation process. b. nervous system.
   c. inhalation process. d. sleeping.
4. .... is the muscle that has an important role in breathing.
   a. Rib b. Diaphragm c. Trachea d. Epiglottis
5. All the following methods are necessary to keep the respiratory system healthy except ....
   a. eating fruits rich in vitamin "C" as orange. b. stop smoking.
   c. being in crowded places. d. keeping off the severe cold.

2 (A) Give reasons for : *(5 marks)*

1. The number of the respiration times increases when the body is more active.
   ....
2. You must eat fruits as orange and guava.
   ....
3. Alveoli are surrounded by blood capillaries with very thin walls.
   ....

(B) How can you keep the respiratory system healthy ?

....
....
....
....

3 **Complete the following statements :** *(5 marks)*

1. The respiration process includes two processes which are ………… and …………
2. During the ………… process, the thoracic cavity enlarges as the ribs …………
3. During the exchange of gases, ………… gas which exists in the blood capillaries is exchanged with ………… gas which exists in the …………
4. The number of respiration processes ………… when your body is more active.
5. Each bronchus is divided inside each lung into ………… that end in …………

4 **Write the scientific term :** *(5 marks)*

1. The air that contains carbon dioxide gas and water vapour. (…………………)
2. Tiny air sacs are found inside the two lungs. (…………………)
3. A process by which the air rich in oxygen gas enters the lungs. (…………………)
4. A process by which the air rich in carbon dioxide gas and water vapour is expelled outside the body. (…………………)
5. A muscle contracts and moves down during inhalation process and relaxes and moves up during exhalation process. (…………………)

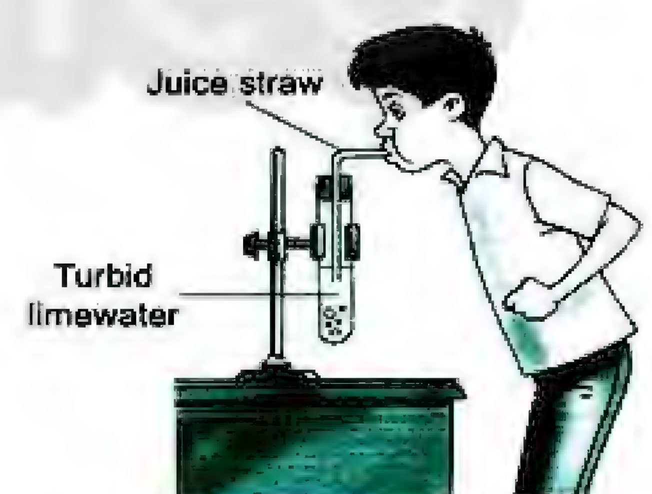
5 **(A) Mention the passage of oxygen gas during inhalation process.** *(5 marks)*

……………………………………………………………………………………
……………………………………………………………………………………
……………………………………………………………………………………

(B) Look at the opposite figure, then mention :

What do you conclude from this activity ?

……………………………………………………………
……………………………………………………………
……………………………………………………………



Unit 1 Lessons 1 & 2

Test yourself 5

25

Good Very Good Excellent

Answer each of the following questions :

1 Choose the correct answer : *(5 marks)*

1. The following organ to pharynx in digestive system is ....
   a. esophagus. b. stomach.
   c. large intestine. d. small intestine.
2. Tongue is the speech organ as it changes the sound coming from .... into understandable words.
   a. salivary glands b. pharynx c. larynx d. esophagus
3. Anus is located at the end of ....
   a. ileum. b. villi. c. rectum. d. stomach.
4. The exchange of gases occurs in alveoli through their ....
   a. opening. b. ending. c. walls. d. thin walls.
5. The number of respiration times increases in .... case.
   a. sitting b. standing c. running d. sleeping

2 Write the scientific term : *(5 marks)*

1. The cavity in which the digestive system exists. (..................)
2. The end opening of digestive canal. (..................)
3. Process occurs in the small intestine specially in ileum. (..................)
4. It is the following organ to pharynx in respiratory system. (..................)
5. They are found in nose to filter the air from dust and microbes before entering the two lungs. (..................)

3 Put (✓) or (✗), then correct the wrong ones : *(5 marks)*

1. Trachea is a tube supported with incomplete cartilaginous cilia. ( )
   ....
2. Limewater is used to test the presence of oxygen gas. ( )
   ....
3. Respiration process increases when your body becomes less active. ( )
   ....

4. Villi extend from the inside of the small intestinal wall. ( )

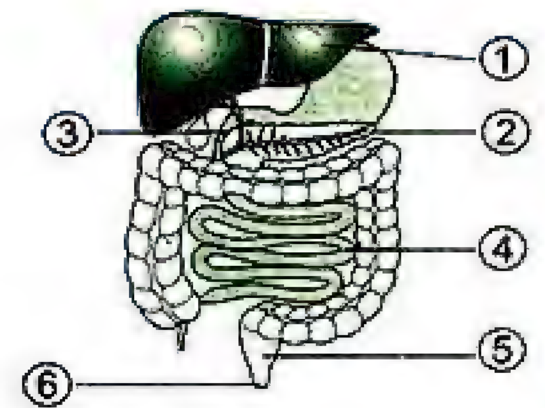
....

5. Eat fruits rich in vitamin (C) leads to cancer. ( )

....

4 **(A) Look at the opposite figure of a part of the digestive system :** *(5 marks)*

Label the figure.



① .... ② ....

③ .... ④ ....

⑤ .... ⑥ ....

(B) What happens if ... ?

Liver is infected by a disease.

....

....

5 **(A) What is the function of ... ?** *(5 marks)*

1. Circulatory system : ....

....

2. Limewater : ....

....

(B) Complete the following table :

Points of comparison	Gastric juice	Saliva	Bile juice
It is secreted by :	....	....	....
Its function :	....	....	....

Unit 1 Lesson 3

Test yourself 6

25

Good Very Good Excellent

Answer each of the following questions :

1 Complete the following statements : *(5 marks)*

1. The human body is made up of a group of ………… which consist of a group of …………
2. The tissue consists of a group of …………
3. The plant cell is the ………… of the plant body.
4. The cell is the unit of ………… and ………… in the living organism.
5. ………… and ………… characterize the plant cell than the animal cell.

2 (A) Give reasons for : *(5 marks)*

1. The plant cell contains green plastides (chloroplasts).

……………………………………………………………………………………

2. The cell contains nucleus.

……………………………………………………………………………………

3. The body systems work integrally in a full harmony.

……………………………………………………………………………………

(B) What is the function of ... ?

1. Cytoplasm : ……………………………………………………………………

……………………………………………………………………………………

2. Plasma membrane : ……………………………………………………………

……………………………………………………………………………………

3 (A) Put (✓) or (✗) : *(5 marks)*

1. Tissue is made up of symmetric organs. ( )
2. The plant cell contains nucleus. ( )
3. The animal cell differs from the plant cell because the animal cell contains cell wall. ( )
4. The cell is the smallest building unit of the living organism's body. ( )

(B) What happens if ... ?

1. The cell doesn't contain cell (plasma) membrane.

……………………………………………………………………………………

2. Yeast fungus is added to molases (cane honey).

....

3. The plant leaves don't contain chloroplasts.

....

4 **(A) Choose the correct answer :** *(5 marks)*

1. .... is found in plant cell, but not found in animal cell.
   a. Nucleus b. Cytoplasm
   c. Chloroplast d. Plasma membrane
2. .... is an example of unicellular living organisms.
   a. Root b. Yeast fungus c. Human body d. (b) and (c)
3. Yeast fungus converts .... into alcohol.
   a. wheat b. oil c. sugar d. table salt

(B) Compare between the plant cell and the animal cell :

....

....

....

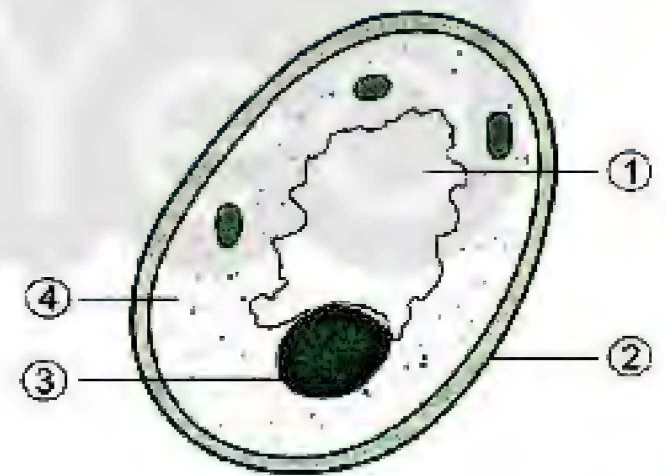
....

5 **(A) Look at the opposite figure, then answer :** *(5 marks)*

1. What is the name of the opposite figure ?

....

2. Label this figure, then mention the function of the structure no. ④



① .... ② ....
③ .... ④ ....

The function of no. ④ : ....

....

(B) Write the scientific term :

1. It is a fluid that fills the cell and all the cell components are suspended in it. (....................)
2. The unicellular living organism that is used in making bread. (....................)
3. The integrated living organism that has one cell only. (....................)

Unit 1 Lessons 1, 2 & 3

Test yourself 7

25

Good Very Good Excellent

Answer each of the following questions :

1 Write the scientific term : *(5 marks)*

1. A group of systems working together. (..................)
2. Micro-organisms that cannot be seen by the naked eye and their bodies consist of only one cell. (..................)
3. Small organelles spread in the cytoplasm of the plant cells and make photosynthesis process. (..................)
4. They line the trachea to eject up strange objects. (..................)
5. A biological process that is carried out by the green plant to make its own food. (..................)

2 Put (✓) or (✗), then correct the wrong ones : *(5 marks)*

1. The digestive canal is 6 metres. (   )
....
2. The number of teeth in adult person is 23. (   )
....
3. Water is absorbed from food remains in the stomach. (   )
....
4. Carbon dioxide gas only leaves the lungs during exhalation process. (   )
....
5. Unicellular living organisms are formed of one cell only . (   )
....

3 [A] Choose from column (B) what suits it in column (A) : *(5 marks)*

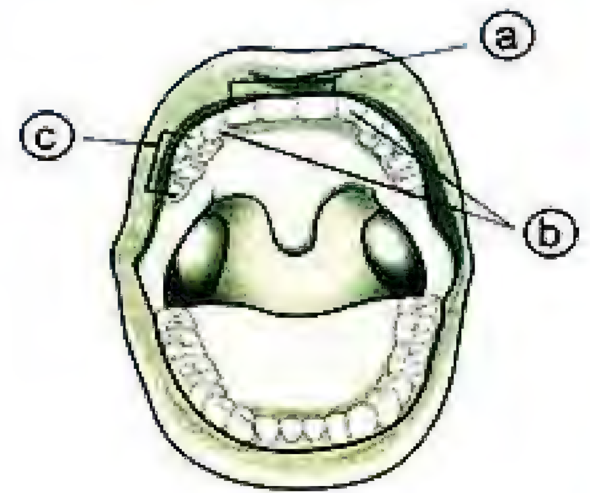
(A)	(B)
1. The nose	a. responsible for tasting food.
2. The trachea	b. closes the trachea during swallowing.
3. Plant cell	c. is lined with blood capillaries to warm the air
4. Tongue	d. contains cartilaginous rings.
5. Liver	e. has green plastids.
6. The epiglottis	f. secretes bile juice in the small intestine.

1. .... 2. .... 3. ....
4. .... 5. .... 6. ....

(B) Define :

1. Inhalation process :
   ....
2. Exhalation process :
   ....

4 **(A) The opposite figure represents a part of the digestive system :** *(5 marks)*



1. **Label the figure :**
   - ⓐ points to ....
   - ⓑ points to ....
   - ⓒ points to ....
2. **Write the function of each one :**
   - Function of ⓐ ....
   - Function of ⓑ ....
   - Function of ⓒ ....

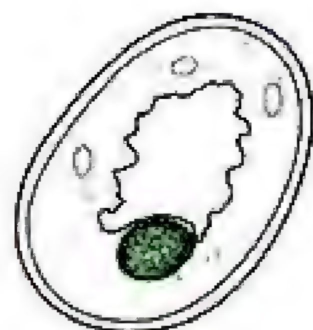
(B) Correct the underlined words :

1. Yeast fungus is used in making <u>paper</u>.
   ....
2. Yeast fungus converts sugar solution into alcohol and <u>oxygen gas</u>.
   ....

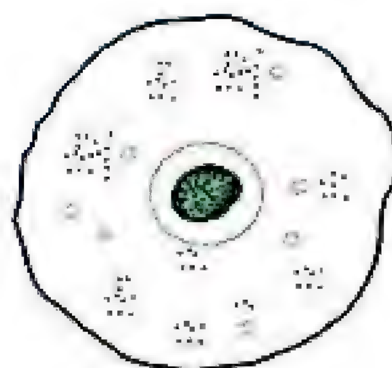
5 **(A) Give reasons for :** *(5 marks)*

1. The respiratory system is an example of the living organism's system.
   ....
   ....
2. We use the microscope to see unicellular living organisms.
   ....
3. Yeast fungus is an integrated living organisms.
   ....
   ....

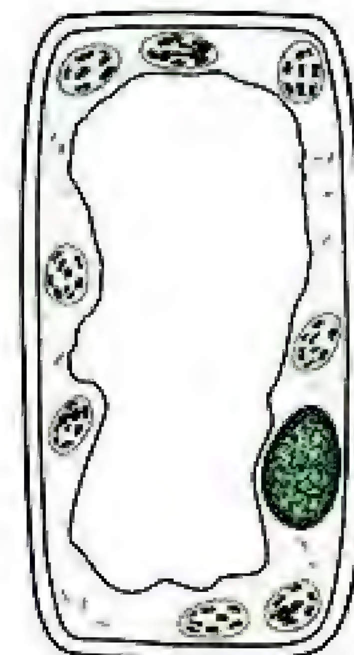
(B) Write the name of the following figure :



1. ....



2. ....



3. ....

Unit 1 Lesson 4

Test yourself 8

25

Good Very Good Excellent

Answer each of the following questions :

1 Complete the following statements : *(5 marks)*

1. The photosynthesis process requires .... , water, carbon dioxide gas and some ....
2. .... is a gas necessary for photosynthesis process, while .... is a gas produced from the photosynthesis process.
3. Green algae is an example of ...., but fungi is an example of ....
4. All living organisms are classified into .... , ... and ....
5. Decomposers feed on ....

2 (A) Put (✓) or (✗) : *(5 marks)*

1. The plant gets its food by eating some producers. ( )
2. Chloroplasts are responsible for the absorption of sunlight that is needed in the photosynthesis process. ( )
3. Consumers and decomposers don't depend on themselves in making food. ( )
4. Bread mold fungus contains chloroplasts. ( )

(B) Give reasons for :

1. Decomposers are very important.

....

2. The green plants are called producers.

....

3. Green plants are necessary for keeping the ratio of oxygen gas and carbon dioxide gas constant in air.

....

3 (A) Classify the following living organisms according to their way of feeding into producers, consumers and decomposers : *(5 marks)*

Yeast fungus – Yoghurt bacteria – Lion – Orange tree –
Wild cat – Zebra –Green algae – Human.

– Producers : ....

– Consumers : ....
– Decomposers : ....

(B) Compare between producers, consumers and decomposers :

....
....
....
....
....

4 Write the scientific term : *(5 marks)*

1. The parts of the green plant, where the photosynthesis process occurs. (..................)
2. Living organisms can make their food by the photosynthesis process. (..................)
3. Living organisms that depend on dead bodies in their feeding. (..................)
4. A chemical substance that is used to check the presence of starch in the green plant leaves. (..................)
5. The gas that is produced by plants and helps in burning. (..................)

5 (A) What happens if ... ? *(5 marks)*

1. Carbon dioxide gas not found in air.
....
2. The plants found far from sunlight.
....

(B) Correct the underlined words :

1. Products of photosynthesis are plant food and **carbon dioxide gas**. (..................)
2. **Some animals** depend on sunlight to make their own food by photosynthesis process. (..................)

(C) Mention 3 examples of producers :

....
....
....

General Exercise of the School Book on Unit 1

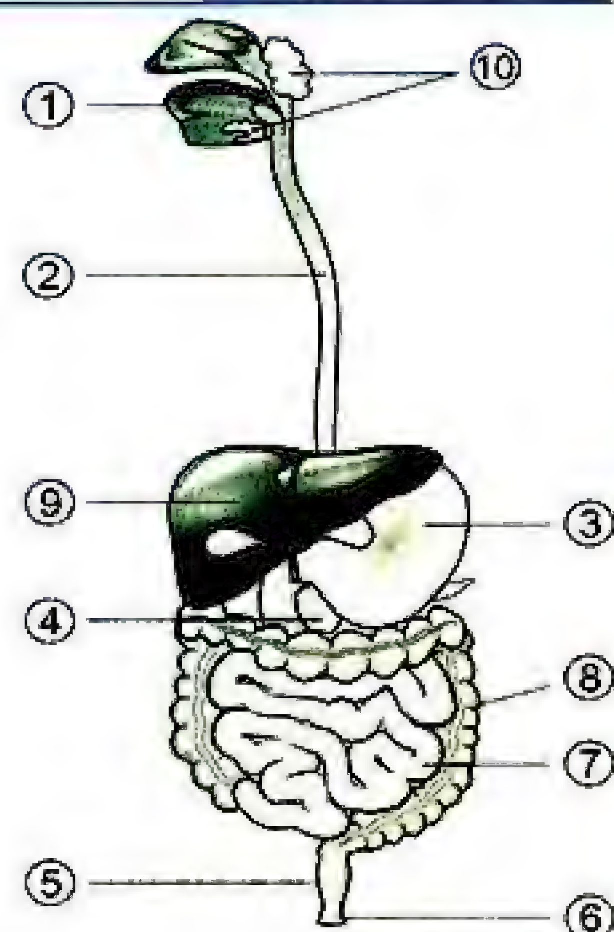
1 Complete the following statements :

1. ………… gas is evolved during the process of photosynthesis, while ………… gas is released as a product of a respiration process.
2. The living organism's body is made up of systems integrated with each other, and each system is made up of ………… that consist of ………… , where each of them consists of ………… that each of them has its own function.
3. Proteins are digested in ………… and …………
4. The living organisms which are responsible for decomposing remains of living organisms are known as …………
5. ………… and ………… are examples of digestive juices in the human body.
6. ………… is an example of the unicellular living organisms.

2 Choose the correct answer :

1. Gas exchange during the process of respiration occurs in the …………
   a. trachea. b. nose. c. mouth. d. alveoli.
2. Plants use ………… in the process of photosynthesis.
   a. oxygen b. nitrogen c. carbon dioxide d. water vapour
3. Undigested food is assembled in the …………
   a. stomach. b. small intestine. c. large intestine. d. duodenum.
4. The ………… is an organ of the human respiratory system.
   a. heart b. stomach c. lung d. liver
5. The stomach belongs to the ………… system.
   a. digestive b. reproductive c. urinary d. nervous

3 Answer the following questions depending on the following figure :



1. At which part saliva secreted ?
   ……………………………………………………………
2. What is the relation between the organ number (9) and digestion of fats ?
   ……………………………………………………………
3. State the number of the organ which absorbs the digested food. Write its name.
   ……………………………………………………………

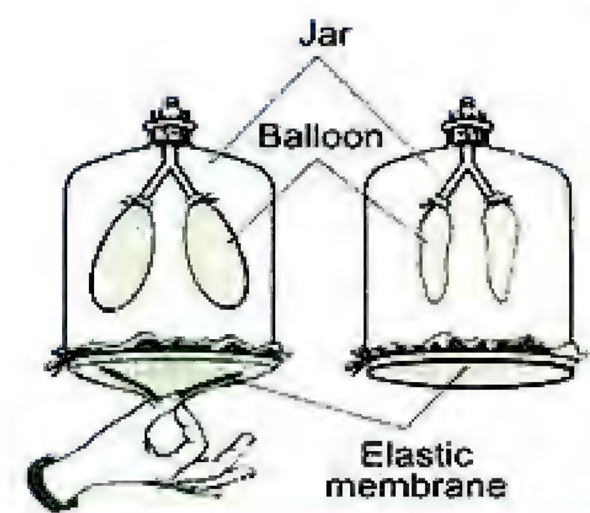
4 **The opposite experiment represents the process of respiration.**

Explain the mechanism of respiration from your studying to this experiment.

....

....

....



5 **Compare between the plant cell and the animal cell according to :**

1. Chloroplasts.
2. Cell wall.

....

....

6 **State the type of juices secreted by the following :**

(Salivary glands - Liver).

....

....

7 **Write the scientific term for each of the following sentences :**

1. The building unit in a living organism. (..................)
2. A liquid secreted in the mouth and helps in starch digestion. (..................)
3. A juice is secreted from the liver and affects fats digestion. (..................)
4. Small organelles spread in the cytoplasm of the plant cells and make photosynthesis process. (..................)
5. The living organisms that can make their own food by themselves through the process of photosynthesis. (..................)

8 **What happens if ... ?**

1. The absence of chloroplasts from the corn plant cells.

....

2. The absence of decomposers from nature.

....

....

3. Removing the small intestine from a human body.

....

....

4. Removing the epiglottis from a human body.

....

5. There are no mucus or hair in the nose.

....

Model Exam 1 on Unit 1

25

Good
Very Good
Excellent

Answer each of the following questions :

1 Complete the following statements : *(5 marks)*

1. Salivary glands, ………… and ………… are known as the digestive canal supplementaries.
2. ………… and ………… are the products of the photosynthesis process.
3. Nose contains ………… and ………… to filter the inhaled air from dust.
4. The plant tissue consists of a group of similar …………
5. The total number of teeth in the adult person is …………
6. Diaphragm moves ………… during inhalation and moves ………… during exhalation.

2 (A) Choose the correct answer : *(5 marks)*

1. The moving organ in the mouth cavity is the …………
   a. tongue. b. teeth. c. esophagus. d. saliva.
2. The plant cell is characterized than the animal cell by having …………
   a. chloroplasts. b. cell wall.
   c. (a) and (b). d. no correct answer.
3. All the following are considered as producers except …………
   a. green algae. b. banana tree.
   c. bean plant. d. bread mold fungus.

(B) What is the function of epiglottis ?

……………………………………………………………………

(C) Mention the economic importance of yeast fungus.

……………………………………………………………………

3 Write the scientific term : *(5 marks)*

1. A group of similar tissues. (…………………)
2. The part of the digestive system at which the intestinal juice is poured. (…………………)
3. The structures that found in the plant cell and are responsible for the absorption of sunlight. (…………………)

4. The living organisms that depend on plants or animals in their feeding.
(....................)

5. The energy that is used by green plants to make their own food.
(....................)

4 **(A) Put (✓) or (✗) :** *(5 marks)*

1. Decomposers can make their own food by themselves through the photosynthesis process. (   )
2. The nose is lined with blood capillaries to warm the inhaled air before entering the two lungs. (   )
3. Animal cell is surrounded by cell wall to protect it from outside. (   )
4. The bile juice is secreted in the stomach. (   )
5. Carbon dioxide gas turns limewater into milky. (   )
6. Undigested food is assembled in the large intestine. (   )

(B) What happens if ... ?

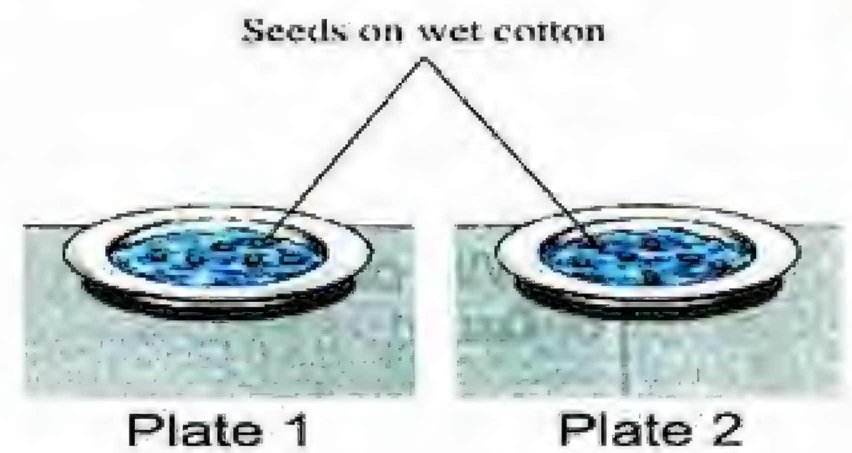
1. The small intestine is removed from the digestive system.
....
....
2. The diaphragm muscle relaxes.
....
....

5 **(A) Give reasons for :** *(5 marks)*

1. We use iodine solution to detect the presence of starch in plant leaves.
....
2. Bile juice is very important.
....

(B) Choose the correct answer :

To find out whether seeds grow better in the light or dark as shown in the opposite figures, we can ....



a. keep the two plates in a warm and dark place.
b. keep one plate in a light place and the other one in a dark place.
c. keep the two plates in a warm and light place.
d. put the two plates in a light and cold place.

Model Exam 2 on Unit 1

25

Good Very Good Excellent

Answer each of the following questions :

1 Choose the correct answer : *(5 marks)*

1. The living organisms that are used in increasing the soil fertility are ....
   a. producers. b. consumers.
   c. decomposers. d. all the previous answers.
2. Yeast fungus is an example of ....
   a. producers. b. consumers.
   c. decomposers. d. all the previous answers.
3. Rabbit and cow are examples of ....
   a. producers. b. consumers.
   c. decomposers. d. no correct answer.
4. .... gives the plant cell a definite shape.
   a. Plasma membrane b. Cell wall c. Nucleus d. Cytoplasm
5. The nose contains ....
   a. hair. b. mucous layer.
   c. blood capillaries. d. all the previous answers.

2 Complete the following statements : *(5 marks)*

1. Nature is filled with .... like .... and .... like ....
2. Plants are the main source of .... for human and animal.
3. Human breathes in .... gas and breathes out .... gas.
4. The digestive system carries out two processes which are .... and ....
5. Bread mold fungus considered as ....

3 [A] Choose from column (B) what suits it in column (A) : *(5 marks)*

(A)	(B)
1. The two lungs	a. is an example of decomposers.
2. Cell wall	b. the digestion of different types of food is completed in it.
3. Stomach	c. found in plant cell only.
4. Bread mold fungus	d. contain alveoli.
5. Wild cat	e. secretes gastric juice that makes incomplete digestion of proteins.
6. Ileum	f. is an example of consumers.

1. .... 2. .... 3. ....
4. .... 5. .... 6. ....

(B) Define :

1. Respiration process :

....

....

2. The cell :

....

....

4 Put (✓) or (x), then correct the wrong ones : *(5 marks)*

1. The small intestine starts with the ileum and ends with the duodenum. ( )

....

2. The respiratory system exists in the abdominal cavity.. ( )

....

3. Unicellular living organisms are formed of one cell only. ( )

....

4. Plants needs oxygen during photosynthesis process. ( )

....

5. Iodine is used to detect the presence of starch . ( )

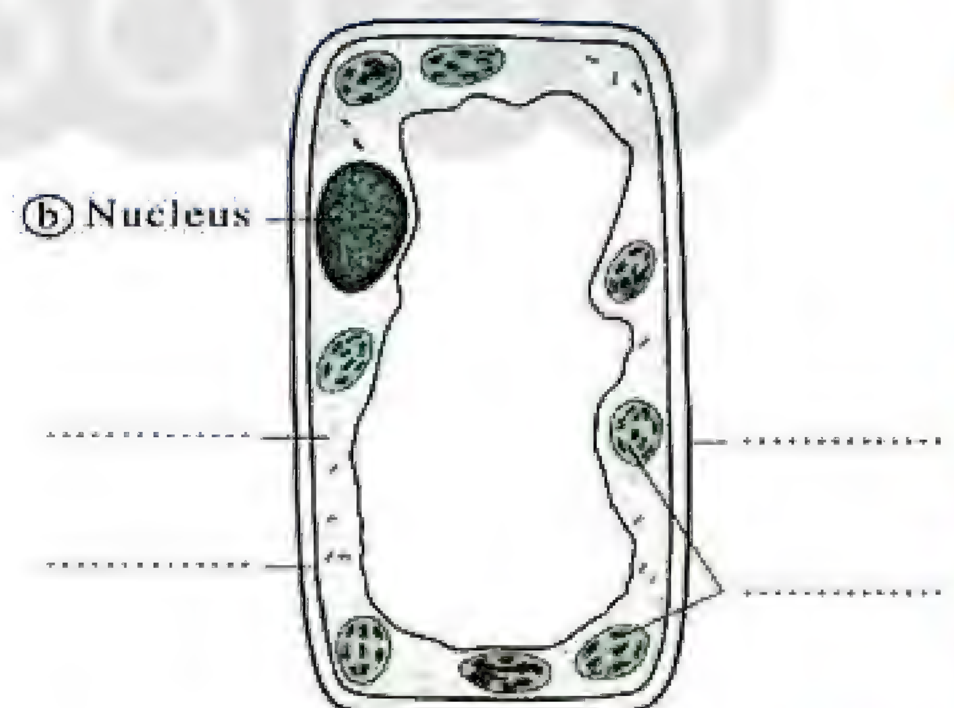
....

5 (A) Correct the underlined words : *(5 marks)*

1. Plants absorb water and mineral salts from **air**. (....................)
2. **Limewater** is used to detect the presence of starch. (....................)
3. **The frog** is a decomposer. (....................)
4. The **organ** is the building unit of the body. (....................)
5. **Oxygen** gas is necessary for the photosynthesis process. (....................)

(B) Put on the figure, the letters and the name of the part that represent the answer of the following questions (as in the solved example) :

a. It supports the plant cell and give it a definite shape.
b. It is responsible for the cell devision.
c. It controls the substances that enter or leave the cell.
d. All biological operations of the cell occur in it.
e. They are responsible for making food by absorbing the sunlight during the photosynthesis process.



Unit 2 Lesson 1

Test yourself 9

25

Good
Very Good
Excellent

Answer each of the following questions :

1 Complete the following statements : *(5 marks)*

1. When a tuning fork vibrates, ... energy is produced.
2. Energy is the ability to do ....
3. .... is the energy produced from the electric lamp.
4. .... is the energy produced from dry cells.
5. .... is the energy produced from the electric fan.

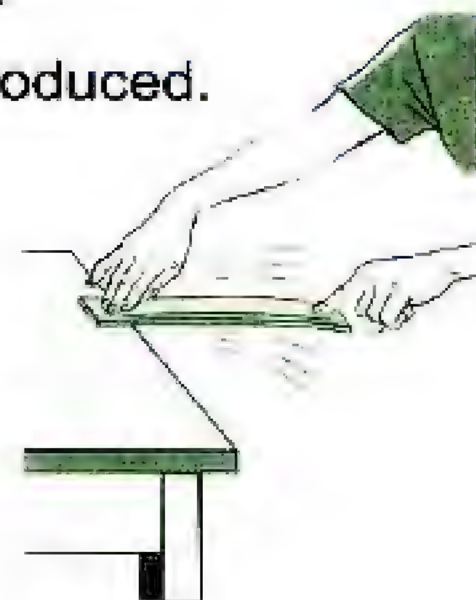
2 Choose the correct answer : *(5 marks)*

1. When you do work by a spring the stored energy in it is .... energy.
   a. electric b. potential c. sound d. light
2. The string, by increasing work, the stored potential energy ....
   a. decreases. b. increases.
   c. constant. d. all the previous answers.
3. Potential energy is the energy stored in an object during ....
   a. rest. b. motion.
   c. working. d. all the previous answers.
4. Kinetic energy is the energy that causes the .... of the body.
   a. rest b. motion
   c. constant d. all the previous answers
5. Sound is originated due to the .... of objects.
   a. rest b. vibration
   c. constant d. no correct answer

3 (A) The opposite experiment represents to learn how sound is produced : *(5 marks)*

1. The ruler .... and produces ....
2. Sound is originated due to the .... of objects.
3. When a tuning fork vibrates, ... energy is produced.





(B) Mention 3 forms of energy :

....

....

....

4 Write the scientific term : *(5 marks)*

1. The energy stored in the spring of a toy car. (..................)
2. The energy stored in batteries. (..................)
3. The form of energy that reaches ear causing hearing. (..................)
4. The energy produced from the washing machine. (..................)
5. The energy produced by the solar cells. (..................)

5 [A] Choose from column (B) what suits it in column (A) : *(5 marks)*

(A)	(B)
1. Energy	a. stores potential energy.
2. Sound	b. is the ability to do work.
3. The spring of a toy car	c. results from the vibration of objects.
4. Chemical energy	d. produce electric energy.
5. Solar cells	e. is the energy stored in an objects during rest.
6. Potential energy	f. is stored in the battery.

1. .... 2. .... 3. ....

4. .... 5. .... 6. ....

[B] Give reasons for :

On filling the spring of a toy car, then let it free, the car moves.

....

....

Unit 2 Lesson 1

Test yourself 10



Answer each of the following questions :

1 Choose the correct answer : *(5 marks)*

1. The convergent lens changes light (solar) energy to .... energy that makes the paper burn.
   a. electric b. light c. heat d. kinetic
2. In radio, electric energy changes into .... energy.
   a. sound b. kinetic c. heat d. (a) and (c)
3. Kinetic energy can be changed into ....
   a. sound energy. b. chemical energy.
   c. heat energy. d. (a) and (c).
4. Electric fan, washing machine and electric mixer are forms of changing .... energy into .... energy.
   a. electric – kinetic b. sound – light
   c. kinetic – electric d. all the previous answers
5. Light energy changes into electric energy in the ....
   a. solar cells. b. solar heater. c. electric lamp. d. electric fan.

2 (A) Mention the changes of energy in each of the following cases : *(5 marks)*

1. Computer speakers :
   ....
2. Television :
   (a) ....
   (b) ....
3. Solar cell :
   ....

(B) Look at the following figure, then complete the following :



1. The convergent lens changes .... energy into .... energy.
2. If the piece of paper is exposed to the Sun rays for a long period of time, it will .... and ....

3 **Complete the following sentences :** *(5 marks)*

1. The energy produced from a guitar is ...., while the energy produced from hammering on a piece of iron is ....
2. In the battery, the stored .... energy is changed into .... energy.
3. In the electric lamp, ... energy is changed into .... energy.
4. Light energy can be changed into electric energy in .... and it can be changed into heat energy in ....
5. .... energy can be changed into .... energy on tapping a drum.

4 **(A) Give reasons for :** *(5 marks)*

1. On passing electric current through electric fan, it rotates.

....

....

2. The light of the bicycle lamp increases by increasing the speed of the bicycle.

....

....

(B) Mention the benefits of the solar cell.

....

....

....

....

5 **What is the difference between :** *(5 marks)*

1. A child's toy operated by batteries and another one operated by a spring.

....

....

....

2. An electric heater and a solar heater.

....

....

....

3. Music produced from violin and that produced from radio.

....

....

....

4. Dynamo and solar cell.

....

....

....

Unit 2 Lesson 2

Test yourself 11

25

Good Very Good Excellent

Answer each of the following questions :

1 Complete the following sentences : *(5 marks)*

1. Electricity is divided into ………… types which are ………… and …………
2. The vision of ………… in the sky and the standing of ………… during combing are related to ………… electricity.
3. ………… is a source of electric current in electric circuit.
4. The ………… is the closed path of the electric current.
5. ………… is the electric charges that flow through wires forming the electric …………

2 Put (✓) or (✗), then correct the wrong ones : *(5 marks)*

1. Hearing a sound during putting off your clothes is related to the colour of your clothes. ( )
…………………………………………
2. Rubbing of objects generates static electricity. ( )
…………………………………………
3. The electric circuit is the closed path of the static electricity. ( )
…………………………………………
4. The flow of electric charges in one direction is called the direct static electricity. ( )
…………………………………………
5. Electric current flows through an open circuit. ( )
…………………………………………

3 (A) Give reasons for : *(5 marks)*

1. We must turn off the television when no one watching it.
…………………………………………
2. Removing the battery from the electric circuit makes the lamp turned off.
…………………………………………
3. Rubbing of objects generates static electricity.
…………………………………………

(B) Write the scientific term : *(5 marks)*

1. The electric current that flows in one direction. (…………)

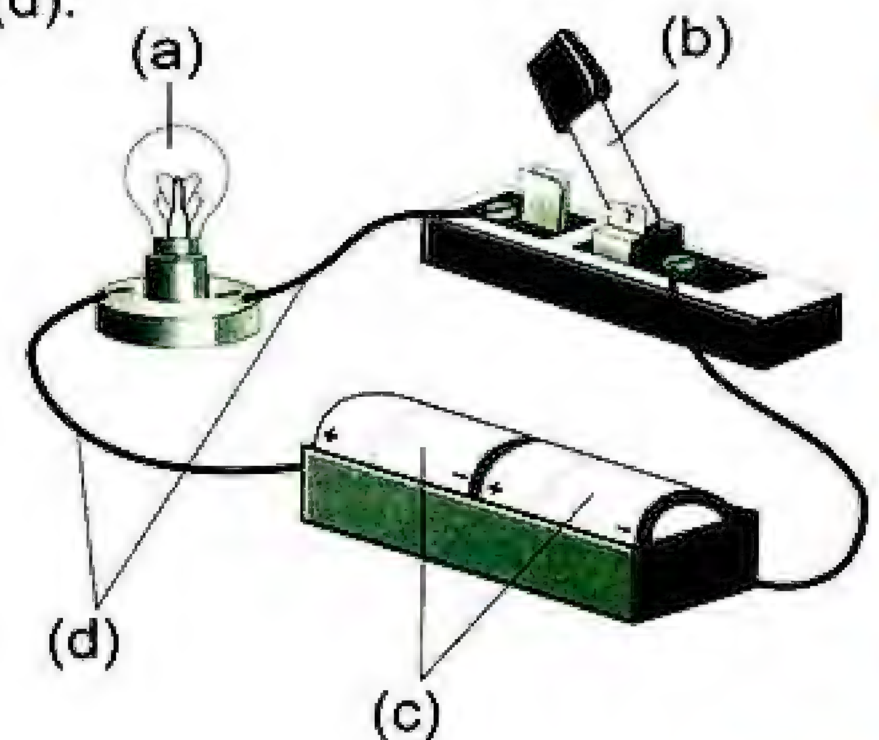
2. It is used to control the closing and the opening of the electric circuit. (...............)

4 **Choose the correct answer :** *(5 marks)*

1. Static electricity is electric charges that .... on an object.
   a. move b. transfer c. disappear d. remain
2. Rubbing objects with wool generates ....
   a. current electricity. b. static electricity.
   c. current and static electricity. d. all the previous answers.
3. A charged balloon .... powdered sugar.
   a. repels b. does not have an effect on
   c. attracts d. no correct answer
4. .... is one of static electricity phenomena.
   a. Tide and ebb b. Water current
   c. Storm d. Lightning
5. Dynamic electricity is .... electricity charges.
   a. static b. unaffected
   c. current d. all the previous answers

5 **The opposite experiment represents to form a model of an electric circuit :**
Answer the following questions : *(5 marks)*

1. What happens on removing (b) from your electric circuit ?
   ....
   ....
2. What happens on removing (c) from your electric circuit ?
   ....
   ....
3. What is the function of each items (b), (c) and (d).
   - Function of (b) ....
   - Function of (c) ....
   - Function of (d) ....



General Exercise of the School Book on Unit 2



1 **Put (✓) or (✗) in front of the following sentences :**

1. Sound stops when the vibration of tuning fork stops. ( )
2. On filling the spring of a toy car, kinetic energy changes into potential energy. ( )
3. Small bits of paper are attracted to a rubbed plastic ruler. ( )

2 **What is the name of produced energy when ... ?**

1. Rubbing your hands together. (..............)
2. Knocking on the door of classroom. (..............)
3. Running of a pupil. (..............)
4. Pulling of a string. (..............)
5. Ringing of a school bell. (..............)
6. Lighting of an electric lamp. (..............)

3 **Complete the following sentences :**

1. Sound originates from ....
2. Energy is the ability to do ....
3. We get .... energy from the solar cells.

4 **Give reasons for :**

1. Attraction small bits of paper to a ruler rubbed by your hair.

....

2. You hear sound when you tap a tuning fork.

....

3. When you ride a bicycle, some changes of energy happen.

....

....

5 **What is meant by ... ?**

1. Static electricity.

....



2. Current electricity.

....

3. Sound.

....

6 **What happens when ... ?**

1. Cutting of electric current from your home for one day.

....

2. Closing a ruler rubbed by a piece of wool to small bits of paper.

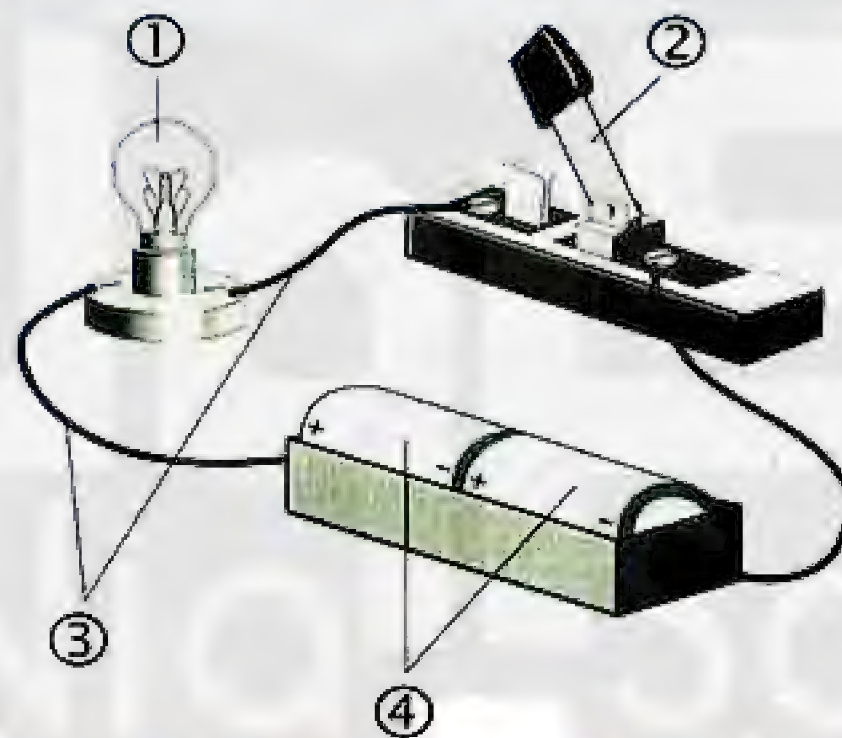
....

3. Pulling the free end of a vertically hanged spring then leaving it free.

....

....

7 **The following figure represents an electric circuit :**



Determine its components and function of each of them.

1. ....
   Its function : ....
2. ....
   Its function : ....
3. ....
   Their function : ....
4. ....
   Their function : ....

Model Exam 1







on Unit two

Total mark 25

1. Choose the correct answer : (5 marks)

1. Most of devices around us work by electricity such as ....
   a. television. b. refrigerator
   c. computer. d. (a), (b) and (c)
2. On removing the battery and closing the electric circuit, ...
   a. the electric current flows.
   b. the electric current does not flow.
   c. the electric current does not flow, then flow.
   d. no correct answer.
3. The function of the connecting wires is, ...
   a. stop the flow of the electric current.
   b. transfer the electric current. c. close the circuit.
   d. be a source of the electric current.
4. The chemical energy is converted into .... energy in the lemon.
   a. kinetic b. light c. chemical d. sound
5. The electric circuit is composed of ....
   a. a battery and a lamp. b. connecting wires.
   c. electric switch. d. all the previous answers.

2. Complete the following statements : (5 marks)

1. Electric energy can be changed into ...., ... and .... energy.
2. Electricity is produced from .... which are electric bodies carry .... charge or .... charge.
3. .... is formed when the electric charges remain on the object.
4. To obtain an electric current, the electric circuit must be ....
5. In the battery, ... energy changes into .... energy.

3. (A) Put (✓) or (✗) : *(5 marks)*

1. Dry cell produces static electricity. ( )
2. Potential energy can be changed into kinetic energy. ( )
3. When you ride a bike, you don't need energy. ( )
4. Conducting wires transfer electric current through the circuit. ( )

(B) Write one function for :

Solar heater : ....

4. (A) Write the scientific term : *(5 marks)*

1. The energy used by solar cell. (..............)
2. The energy produced from vibration of objects. (..............)
3. The tool that connecting components of electric circuit. (..............)
4. It is a clean form of energy. (..............)

(B) Give a reason for the following :

You hear a sound when you tap on a tuning fork.

....

5. Classify the following examples according to the energy produced from them in the table bellow : *(5 marks)*

1. Electric lamp.
2. Radio.
3. Electric mixer.
4. Hammering a piece of iron.
5. Electric fan.
6. Solar cells.
7. Dynamo.
8. Rubbing your hands.
9. Solar heater.
10. Guitar.

Heat energy	Light energy	Kinetic energy	Sound energy	Electric energy
....	....	....	....	....
....	....	....	....	....
....	....	....	....	....
....	....	....	....	....
....	....	....	....	....

Model Exam 2

on Unit two


Good

Very Good

Excellent

Total mark 25

1. Complete the following statements : *(5 marks)*

1. When the electric charges flow through a wire .... electricity is produced.
2. Light energy is the energy produced by the .... or ....
3. There are pieces of equipment in your home which have the ability to do ....
4. Sound energy is the energy produced by .... and ....
5. Kinetic energy can be changed into electric energy in .... and it can be changed into sound energy in ....
6. When you fill a spring of a toy, then leave it the .... energy changes into .... energy.

---

2. (A) Write the scientific term : *(5 marks)*

1. A tool that is considered as a source of electricity. (...............)
2. A battery, a lamp, an electric switch and connecting wires. (...............)
3. The tool that transfers the electric current from the battery to the lamp. (...............)

(B) Name the produced energy from :

1. Guitar. (...............)
2. Hammering on a piece of iron. (...............)
3. Electric fan. (...............)
4. Solar heater. (...............)

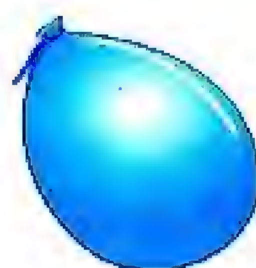
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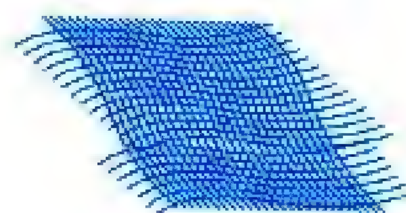
3. (A) Choose from column (B) what suits it in column (A) : *(5 marks)*

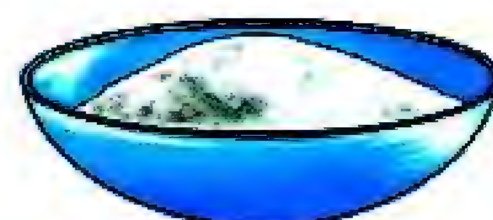
(A)	(B)
1. Static electricity	a. is used to close and open the circuit.
2. Current (Dynamic) electricity	b. is the source of the electric current.
3. The battery	c. the electric charges flow through a wire.
4. The electric switch	d. the electric charges remain on the object.

1. .... 2. .... 3. .... 4. ....

(B)


Balloon


A piece of wool


Powdered sugar

By using these tools, how can you make the balloon attracts the sugar ?

....

....

4. (A) Put (✓) or (✗) : *(5 marks)*

1. You must turning on all the unused equipment. ( )
2. The solar cells change light energy into electric energy. ( )
3. We can form an electric circuit without a battery. ( )

(B) Correct the underlined words : *(5 marks)*

1. The solar cells used to produce electricity from the **satellites**. (..............)
2. **Static** electricity is movable electric charges. (..............)

5. (A) Give reasons for : *(5 marks)*

1. We must use energy-saving lamps.

....

2. Electricity is very important in our life.

....

(B) Choose the correct answer : *(5 marks)*

1. In the piano, ...
   a. kinetic energy changes into sound energy.
   b. kinetic energy changes into heat energy.
   c. potential energy changes into kinetic energy.
   d. light energy changes into heat energy.
2. In the solar cells, ...
   a. sound energy changes into heat energy.
   b. light energy changes into electric energy.
   c. potential energy changes into kinetic energy.
   d. light energy changes into heat energy.
3. In the solar heater and solar cells, the energy used is ....
   a. light energy. b. electric energy.
   c. potential energy. d. kinetic energy.

PART 2

تفوقك في أي عمل عليه العلامة دي 

Final Revision

Unit One : **Living things.**
Unit Two : **Energy and its forms.**

Final Revision on Unit 1



1 Definitions

Item	Definition
1. Digestion process :	It is a process of changing (breaking down) food from a complex form into simple substances to let the body benefits from them.
2. Digestive enzymes :	They are digestive substances that digest food and convert it into simple substances.
3. Respiration process :	It is the process by which a human obtains energy from burning of the digested food with oxygen.
4. Inhalation process :	It is a process by which the air rich in oxygen gas enters the lungs, through the nasal cavity (nose).
5. Exhalation process :	It is a process by which the air rich in carbon dioxide gas and water vapour is expelled out of the lungs through the nasal cavity (nose).
6. The cell :	- It is the building unit of the living organism's body. Or - It is the unit of structure and function in the living organisms.
7. The animal cell :	It is the building unit of the animal body.
8. The plant cell :	It is the building unit of the plant body.
9. Cell wall :	It is the wall that surrounds the plant cell from outside.
10. Plasma (cell) membrane :	It is the membrane that surrounds the cytoplasm.
11. Cytoplasm :	It is the fluid that fills the cell and all the cell components are suspended in it.
12. Photosynthesis process :	A biological process takes place in the green parts (leaves) of a plant to make its own food.
13. Producers :	They are living (autotrophic) organisms that can make their own food by themselves through the photosynthesis process.
14. Consumers :	They are living organisms that depend on producers directly or indirectly to get their own food.
15. Decomposers :	They are living organisms that get their own food by decomposing the organic wastes as dead bodies, plant remains and decayed food.

2

2 Functions or importance

Item	Functions or importance
1. Urinary system :	It helps the body to get rid of the harmful substances.
2. Circulatory system :	It carries out the transport function, where it distributes the digested food and oxygen gas all over the body cells.
3. Nervous system :	It gives us the ability to feel, see, hear, smell and taste.
4. Reproductive system :	It produces new individuals who look like us.
5. Digestive system :	It breaks down complex food into simple substances to let the body gets their benefits.
6. Incisors and canines :	They cut and tear food into small pieces.
7. Molars :	They grind food to make its swallowing easy.
8. Tongue :	- It mixes food with saliva to help in food swallowing. - It turns food inside the mouth cavity. - It is responsible for tasting food.
9. Salivary glands :	They secrete saliva liquid in the mouth that contains digestive enzymes that change starch into simple substances called sugar.
10. Saliva :	It contains digestive enzymes that change starch into simple substances called sugar.
11. Mouth :	Cutting and grinding food with the teeth, digestion of starch into sugar.
12. Esophagus :	It allows food to pass from pharynx to stomach.
13. Stomach :	It secretes gastric juice that makes incomplete digestion of proteins.
14. Liver :	It secretes bile juice in the small intestine (duodenum).
15. Bile juice :	It helps in the digestion of fats as it changes fats into fatty emulsion.
16. Pancreas :	It secretes pancreatic juice in the small intestine (duodenum).
17. Small intestine :	- Completing the digestion of different types of food. - Absorption of the digested food.
18. Large intestine :	It stores wastes, then ejects them outside the body through anus.
19. Rectum :	It absorbs the water from the food remains (wastes).
20. Respiratory system :	It carries out the breathing (respiration) process.

21. Respiration process :	It gives the body of the living organism oxygen to burn food to get the needed energy for all the body activities.
22. Nose :	- It is lined with **mucous layer and hairs** to filter the air from dust and microbes before entering the lungs. - It is lined with **blood capillaries** to warm air before entering the lungs.
23. Epiglottis :	It closes larynx or trachea during swallowing to prevent food from entering the trachea.
24. Trachea :	- It is supported by incomplete cartilaginous rings to keep permanently opened for breathing. - It is lined with cilia to eject up the strange objects.
25. Two lungs :	Gases exchange takes place in them as they have alveoli.
26. Diaphragm muscle in the mechanism of respiration :	It contracts and moves down to help in inhalation process and it relaxes and moves up to help in exhalation process.
27. Limewater :	It is used to detect the presence of carbon dioxide gas.
28. Cell wall :	It supports the plant cell and gives it a definite shape.
29. Plasma (cell) membrane :	It controls the substances that enter or leave the cell.
30. Nucleus :	It organizes the biological operations in the cell and it is responsible for the cell division.
31. Cytoplasm :	All the biological operations of the cell occur in it.
32. Green plastids (chloroplasts) :	They absorb the sunlight that is necessary for plants to make their food by the photosynthesis process.
33. Yeast fungus :	It is used in making bread and alcohol.
34. Iodine solution :	It is used to detect the presence of starch in green plant.
35. Decomposers :	- They help us get rid of dead organisms and plant remains. - They increase the soil fertility. - They are used in a lot of industries.

3 Give reasons for

1. **All body systems are working in full harmony.**
   To keep the human alive.
2. **Food must be digested into simple substances.**
   To let the body benefits from it.

3. Digestion process is very important.

Because it changes the complex food substances into simple food substances to let the body gets benefit from them.

4. Salivary glands secrete saliva inside the mouth cavity.

To change (digest) starch into simple substances called sugar.

5. Teeth are formed of incisors, canines and molars.

To perform different functions as cutting, tearing and grinding food.

6. Molars make food swallowing easy.

Because they grind food.

7. The stomach cannot digest food completely.

Because bile juice, pancreatic juice and intestinal juice that are poured in small intestine complete the digestion of food.

8. Bile juice is very important.

Because it helps in the digestion of fats, where it changes fats into fatty emulsion.

9. Liver helps in digestion of fats.

Because it secretes bile juice that changes fats into fatty emulsion.

10. Starch is not digested in stomach.

Because it is digested and changed into sugar by saliva which is secreted in the mouth.

11. You cannot live without small intestine.

Because the complete digestion of different types of food and the absorption of food occur in it.

12. Absorption of food does not take place in the stomach.

Because food is not completely digested in the stomach.

13. You must not eat fast meals.

Because it contains large amounts of fats.

14. Fats are digested in the small intestine (duodenum).

Because bile juice is poured in duodenum, where it helps in digestion of fats and changes it into fatty emulsion.

15. Proteins are digested in stomach and small intestine.

Because stomach secretes gastric juice that makes incomplete digestion of proteins, while the complete digestion of proteins occurs in small intestine.

16. The respiration process is very important.

Because it gives the body of the living organism the needed energy to do all the body activities.

17. Nose is lined with hairs and mucous layer.

To filter the air from dust and microbes before entering the two lungs.

18. Breathing through nose is preferable to that through mouth.

Because the nose is lined with :

– Hairs and mucous layer to filter the air from dust and microbes.

– Blood capillaries to warm the air before entering the lungs.

19. The trachea has incomplete cartilaginous rings.

To keep it permanently open.

20. Nose has blood capillaries.

To warm air before entering the lungs.

21. The trachea is lined with cilia.

To eject up strange objects as dust.

22. Food doesn't enter the respiratory system during swallowing of food.

Due to the presence of epiglottis that closes the trachea during swallowing.

23. The number of inhalation and exhalation times increases during running.

To help the body in obtaining more energy.

24. The exhaled air turns clear limewater into turbid (milky).

Because it contains carbon dioxide gas.

25. The volume of chest cavity increases during the inhalation process.

Because the diaphragm muscle contracts and moves down and ribs rise upwards, so the volume of chest cavity increases.

26. Alveoli and blood capillaries have thin walls.

To allow the exchange of gases between them.

27. Alveoli are surrounded by a network of blood capillaries.

To allow the exchange of gases.

28. Eating orange and guava is important.

To provide us with vitamin "C" that is necessary to keep the respiratory system healthy.

29. It is preferred for a human to skip being in crowded places.

To keep the respiratory system healthy.

PART 2

30. The exhaled air differs from the inhaled air.

Because the exhaled air is rich in carbon dioxide gas and water vapour, while the inhaled air is rich in oxygen gas.

31. The stomach and the two lungs are organs.

Because they consist of a group of tissues.

32. Digestive system is an example for the living organism's systems.

Because it consists of a group of organs.

33. The nucleus is a very important component in the cell.

Because it organizes the biological operations in the cell and it is responsible for the cell division.

34. The cell membrane is a very important component in the cell.

Because it controls the substances that enter or leave the cell.

35. Plants can make their own food.

Due to the presence of green plastids that are responsible for making food by the photosynthesis process.

36. Plant cell contains chloroplasts.

Because they are responsible for making food by the photosynthesis process.

37. The cell wall is very important structure for the plant cell.

Because it supports the plant cell and gives it a definite shape.

38. The unicellular organism is an integrated living organism.

Because it has the ability to do all the biological functions.

39. Yeast fungus has a definite shape.

Due to the presence of cell wall that determines the cell shape.

40. Yeast fungus has an economic importance.

Because it is used in making bread and alcohol.

41. Yeast fungus is used in making bread.

Because during making bread, yeast produces carbon dioxide gas that causes the swelling of bread and makes it porous and light.

42. Green plants are called producers.

Because they can make their own food by the photosynthesis process.

43. Plants need sunlight, water, carbon dioxide gas and mineral salts.

To make their own food by the photosynthesis process.

44. • The green plant leaves become yellow and weak if they aren't exposed to sunlight.

• The potted plant inside houses should be directed to sunlight.

Because sunlight is necessary for plants to make their own food by the photosynthesis process.

45. Iodine solution is used to detect the presence of starch in the plant leaves.

Because its colour changes into blue in the presence of starch.

46. There are chloroplasts in the cells of producers.

To absorb sunlight that is necessary for photosynthesis process.

47. Cows and chickens are considered as consumers.

Because they don't make their own food, but they depend on producers to get their own food.

48. Lion and tiger are consumers.

Because they don't make their own food, but they depend on consumers that previously fed on producers to get their food.

49. Bread mold fungus is considered as a decomposer.

Because it gets its food through decomposing the bread.

50. Decomposers and consumers can't make their own food.

Due to the absence of chloroplasts.

51. Food spoils if it is left outside the refrigerator for a long period of time.

Because food is exposed to decomposers in air as bacteria that decompose food causing its spoiling.

52. Decomposers have great economical and environmental importance.

Because :

– They help us get rid of dead bodies of organisms and plant remains.

– They increase the soil fertility.

– They are used in a lot of industries.

53. Green algae are considered as producers.

Because they depend on themselves to make their own food by photosynthesis process.

PART 2

4 What happens if ... ?

1. **Salivary glands stop secreting saliva.**
   Starch will not change into sugar in the mouth.
2. **Tongue is not found in the mouth.**
   The food cannot be mixed well with saliva and also we cannot taste the food.
3. **Liver stops secreting bile juice.**
   Fats will not be digested and the human body cannot get their benefit.
4. **Adding the bile juice of chicken to a mixture of cooking oil and water, then shaking them.**
   Oil and water are mixed together forming fatty emulsion.
5. **Stomach doesn't secrete gastric juice.**
   Proteins are not digested into simple food substances.
6. **The small intestine is removed from the human body.**
   Food can't be completely digested and also can't be absorbed, so the human can't get benefit from food.
7. **You exhale several times in front of a mirror.**
   Formation of water droplets on the mirror due to the condensation of water vapour produced from exhaled air.
8. **You blow in a test tube containing clear limewater.**
   The clear limewater becomes turbid (milky).
9. **There is no blood capillaries in the nose.**
   The air will not be warmed before entering the lungs.
10. **The diaphragm muscle moves down.**
    The chest cavity enlarges and the air rich in oxygen gas enters the two lungs through nose, inhalation process occurs.
11. **There is no cilia in the trachea.**
    Strange bodies as dust will enter the respiratory system.
12. **There are no cartilaginous rings in the wall of the trachea.**
    The trachea will not be opened all time, so we can't breathe well.
13. **There are no blood capillaries around alveoli.**
    The exchange of gases between them will not occur.
14. **There are no mucus and hairs in the nose.**
    Dust and microbes will enter the respiratory system.

15. The epiglottis is removed from larynx of the human respiratory system.
Some food particles or water will enter the trachea during swallowing.

16. The diaphragm muscle moves up.
The chest cavity becomes narrow and the air rich in carbon dioxide gas is expelled out of the two lungs through nose, exhalation process occurs.

17. • The plant leaves have no chloroplasts.
• There is no chloroplasts in the corn plant cells. why ?
They can't make their own food, because chloroplasts absorb sunlight that is necessary for photosynthesis process.

18. There is no cell wall in the plant cell.
The plant cell has indefinite shape.

19. Plants aren't exposed to sunlight for few days. why ?
Their green leaves become yellow and weak, because sunlight is necessary for plants to make their own food.

20. Plants disappear from the environment. why ?
All living organisms will die, because the plant is the main source of food and energy for all living organisms.

21. The absence of decomposers from nature.
The soil fertility decreases and the dead bodies of organisms will remain in nature that causes many diseases.

5 Comparisons

1. Comparison between bile juice, pancreatic juice, saliva juice and gastric juice :

Points of comparison	Bile juice	Pancreatic juice	Saliva juice	Gastric juice (digestive)
Secreted by :	It is secreted by liver in the small intestine (duodenum).	It is secreted by pancreas in the small intestine (duodenum).	It is secreted by salivary glands.	It is secreted by stomach.
Its function :	It digests fats and changes it into fatty emulsion.	It helps in digestion of food.	It digests starch into sugar.	It digests proteins incompletely and changes it into a semi-liquid substance.

PART 2

2. Comparison between inhalation process and exhalation process :

Points of comparison	Inhalation process	Exhalation process
Definition :	It is a process by which air enters the two lungs.	It is a process by which air is expelled out of the two lungs.
Diaphragm muscle :	It contracts and moves down.	It relaxes and moves up.
Movement of ribs :	They rise upwards.	They move downwards.
Size of thoracic cavity :	Increases.	Decreases.

3. Comparison between animal cell and plant cell :

Points of comparison	Animal cell	Plant cell
• Cell wall	absent	present
• Plasma membrane	present	present
• Nucleus	present	present
• Cytoplasm	present	present
• Green plastides (chloroplasts)	absent	present

4. Comparison between producers, consumers and decomposers :

Points of comparison	Producers	Consumers	Decomposers
Definition :	They are living organisms that can make their own food by themselves through the photosynthesis process.	They are living organisms that depend on producers directly or indirectly to get their food.	They are living organisms that get their food by decomposing the organic wastes as dead bodies, plant remains and decayed food.
Examples :	- Green plants. - Green algae. - Some types of bacteria.	- **That feed on producers** : Cows, sheep, chickens and humans. - **That feed on consumers** : Lion, hawk, tiger and human.	- Some types of bacteria as yoghurt bacteria. - Some types of fungi as bread mold fungus and yeast fungus.

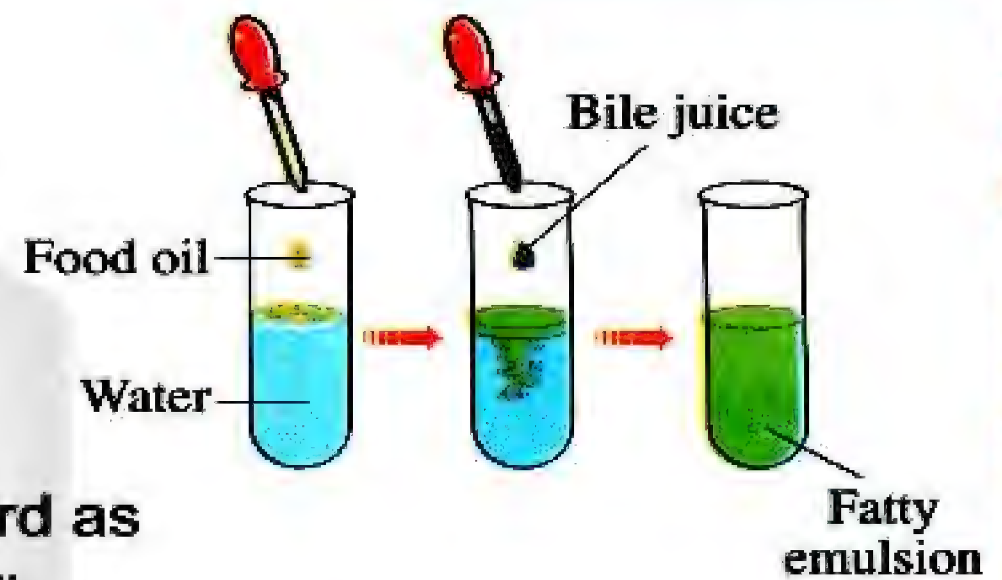
6 Activities



Activity 1 To prove that bile juice helps in the digestion of fats.

Steps:

1. Put an amount of food oil in a test tube containing water, then shake well.



Observation:

Oil and water don't mix.

2. Add some drops of bile juice from any bird as hen to the previous tube, then shake well.

Observation:

Oil and water are mixed together forming fatty emulsion.

Conclusion:

Bile juice breaks down fats (oil) into small particles that dissolve in water forming fatty emulsion.



Activity 2 To show the mechanism of the respiration process.

Steps:

1. Design a model for the two lungs and the chest cavity as shown in fig.(a).
2. Pull the rubber membrane (which represents the diaphragm) downwards as shown in fig.(b).

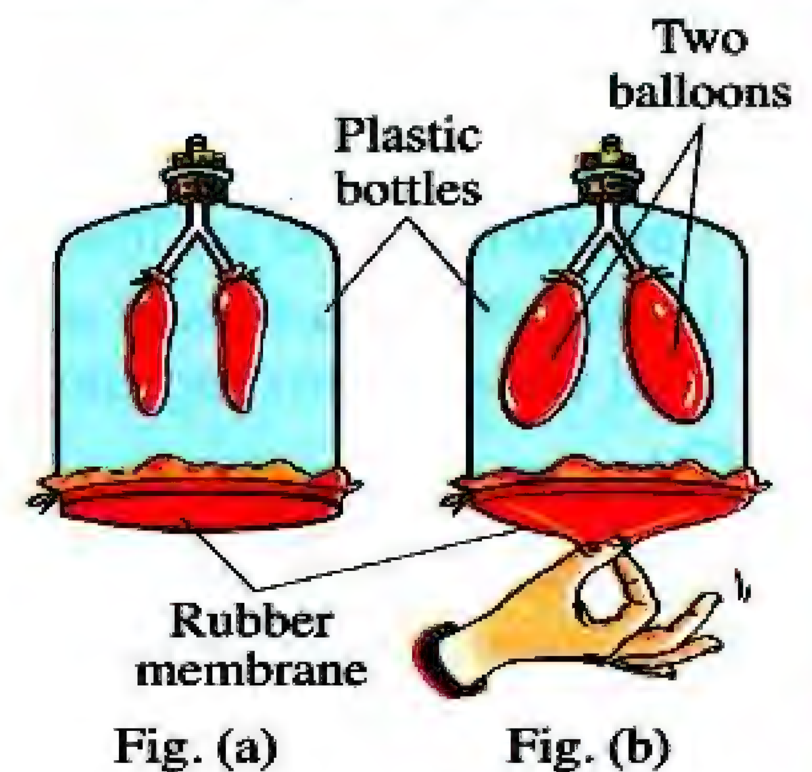


Fig. (a) Fig. (b)

Observation:

The volume of the two balloons increases when pulling the rubber membrane downwards.

3. Release the rubber membrane to turn it back to its original position.

PART 2


Observation:

The volume of the two balloons turns back to its normal volume.

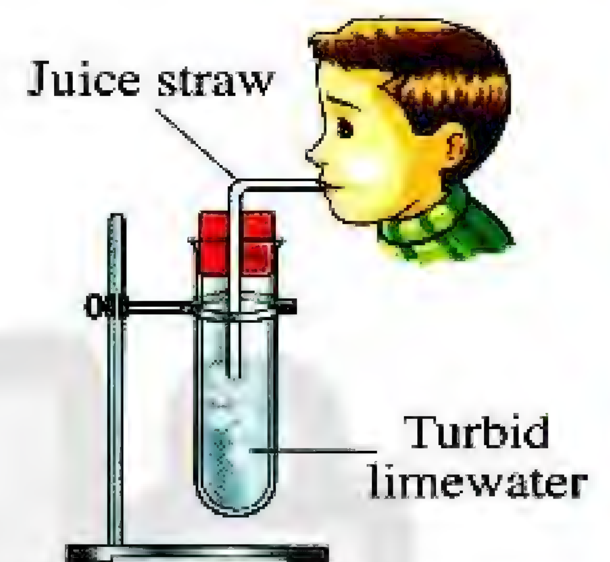

Conclusion:

The mechanism of the respiration process is represented by two processes which are inhalation and exhalation.


Activity 3 To prove that the exhaled air contains carbon dioxide gas.


Step:

Blow in a test tube containing clear limewater.




Observation:

The clear limewater becomes turbid (milky).

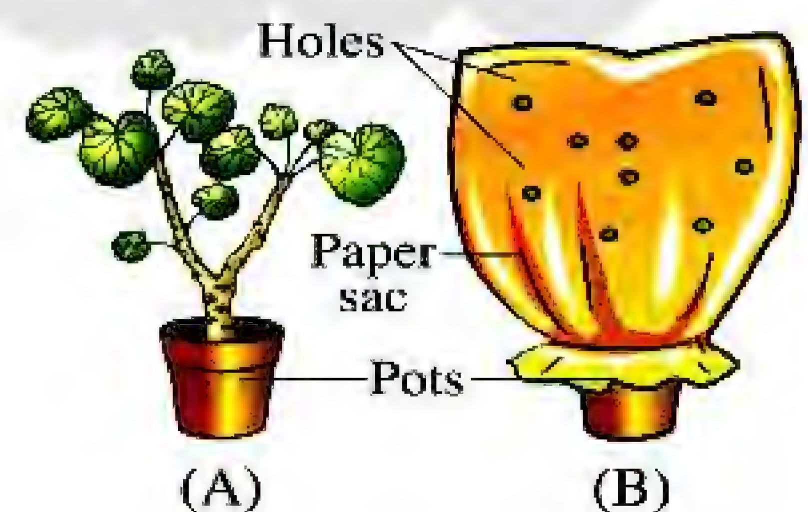

Conclusion:

The exhaled air contains carbon dioxide gas.


Activity 4 To prove the importance of sunlight in the photosynthesis process of green plants.


Steps:

1. Bring two flower pots (A & B) , each one contains a green plant.
2. Cover plant (B) by a paper sac with narrow holes to let the air pass.
3. Leave the two flower pots for two days and water them regularly.




Observation:

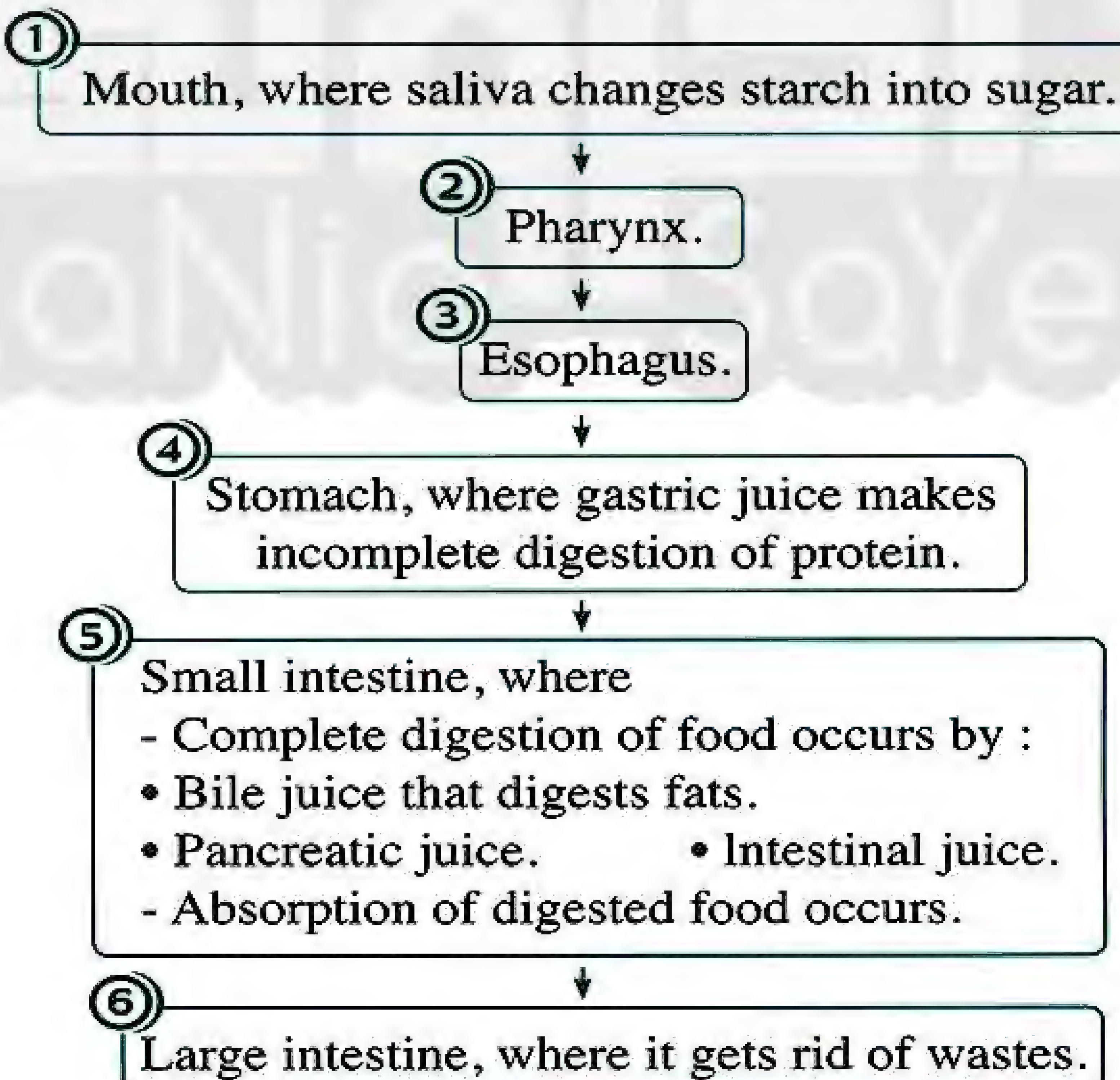
The leaves of plant (B) are yellow and weak , but the leaves of plant (A) are green and strong.


Conclusion:

Sunlight (light energy) is necessary for plants to make their own food.

Main points

- **The digestive system is made up of the digestive canal and the digestive canal supplementaries.**
- The digestive canal consists of **mouth, pharynx, esophagus, stomach, small intestine and large intestine.**
- The digestive canal supplementaries are **salivary glands, liver and pancreas.**
- **The number of teeth in adults is 32,** each jaw has **16 teeth.**
- **The teeth in each jaw divided into** four incisors, two canines and ten molars (4 premolars and 6 molars).
- Pharynx is a common cavity between **esophagus** and **trachea (**between **digestive system** and **respiratory system).**
- Stomach is **a sac-like** muscular organ.
- The small intestine consists of two parts which are **duodenum** and **ileum.**
- **Pancreatic juice** and **bile juice** are poured in the duodenum.
- The journey of food in the digestive system is :



PART 2

- In the digestive system, food undergoes two processes which are **digestion** and **absorption**.
- **How can you keep the digestive system healthy ?**
  - Chew the food well.
  - Don't eat much food that contains large amounts of fats as fast meals.
  - Avoid having food that contains flavour additives.
  - Don't buy food from street sellers to avoid the infectious diseases.
  - Practise sports regularly.
- The most organs of the respiratory system exist in **thoracic (chest) cavity**.
- The human respiratory system consists of **nose, pharynx, trachea, two bronchi**, **two lungs and diaphragm.**
- At the top of trachea there are **larynx (voice box)** and **epiglottis** that lies at the top of larynx.
- The two lungs are surrounded by **ribs (rib cage)**.
- Each lung contains bronchus which is divided into **bronchioles** that end in tiny air sacs called **alveoli**.
- **Diaphragm** is a muscle that separates the thoracic cavity from the abdominal cavity.
- Respiration process includes two processes which are **inhalation** and **exhalation process**.
- The exhaled air contains **carbon dioxide gas** and **water vapour**.
- **How can you keep the respiratory system healthy ?**
  - Avoid being in crowded or poor ventilation places.
  - Keep off the severe cold.
  - Eat fruits rich in vitamin "C" such as orange and guava to protect yourself from cold.
  - Stop smoking or being a passive smoker, because it leads to cancer causing death.

– **Systems** $\xrightarrow[\text{of}]{\text{composed}}$ **Organs** $\xrightarrow[\text{of}]{\text{composed}}$ **Tissues** $\xrightarrow[\text{of}]{\text{composed}}$ **Cells.**

– The plant cell is characterized than the animal cell by the presence of **cell wall** and **green plastids (chloroplasts)**.

– Both animal and plant cells are similar in the presence of **plasma membrane, cytoplasm** and **nucleus**.

– **Yeast fungus** is made up of cell wall, nucleus, cytoplasm and vacuole.

– The necessary factors for the photosynthesis process are :

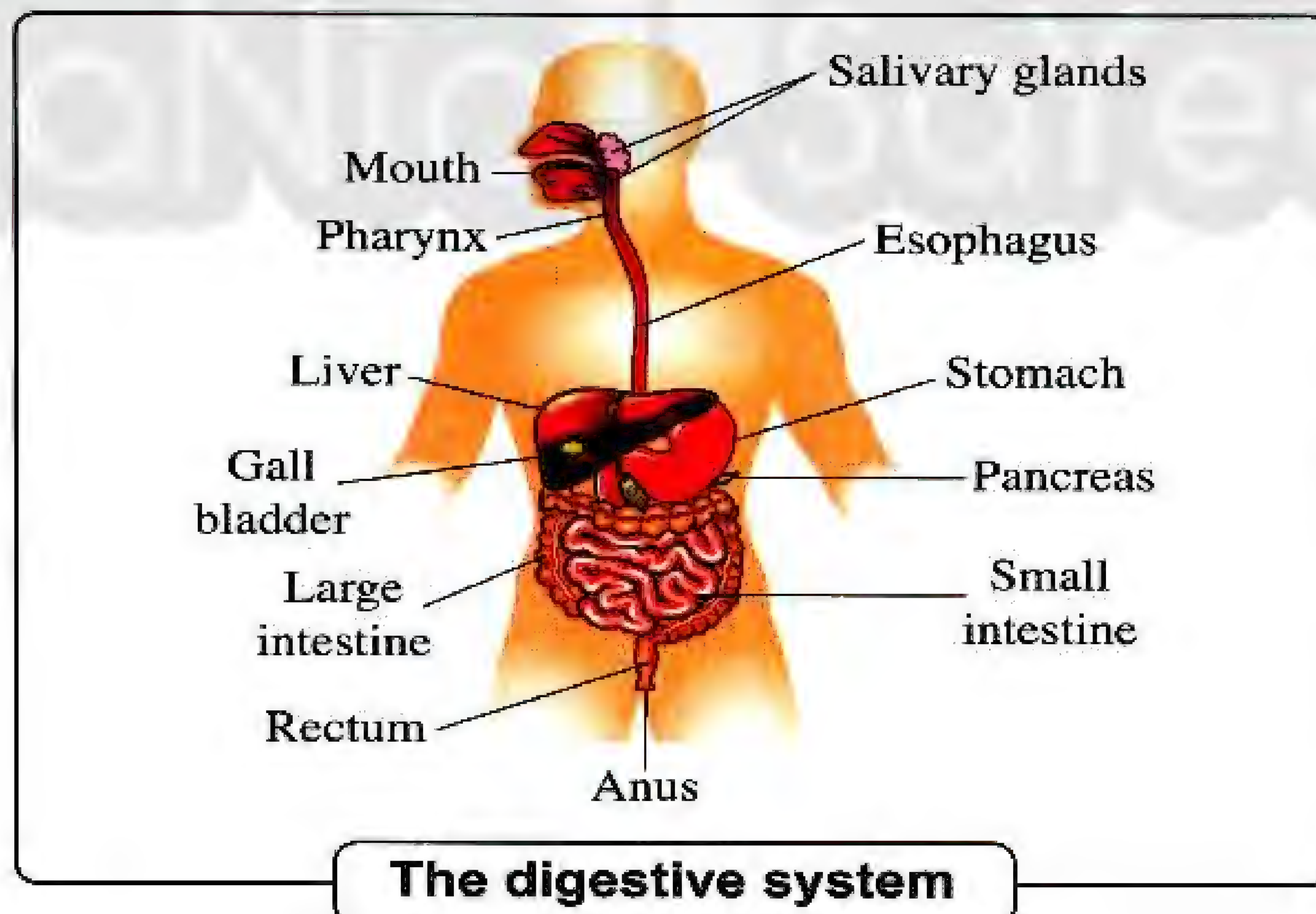
– **Sunlight, chloroplasts, carbon dioxide gas, water and mineral salts.**

– During photosynthesis, the green plants produce **starch** or **sugar** and **oxygen gas**.

– In the respiration process of plants and animals, they use **oxygen gas** and produce **carbon dioxide gas**.

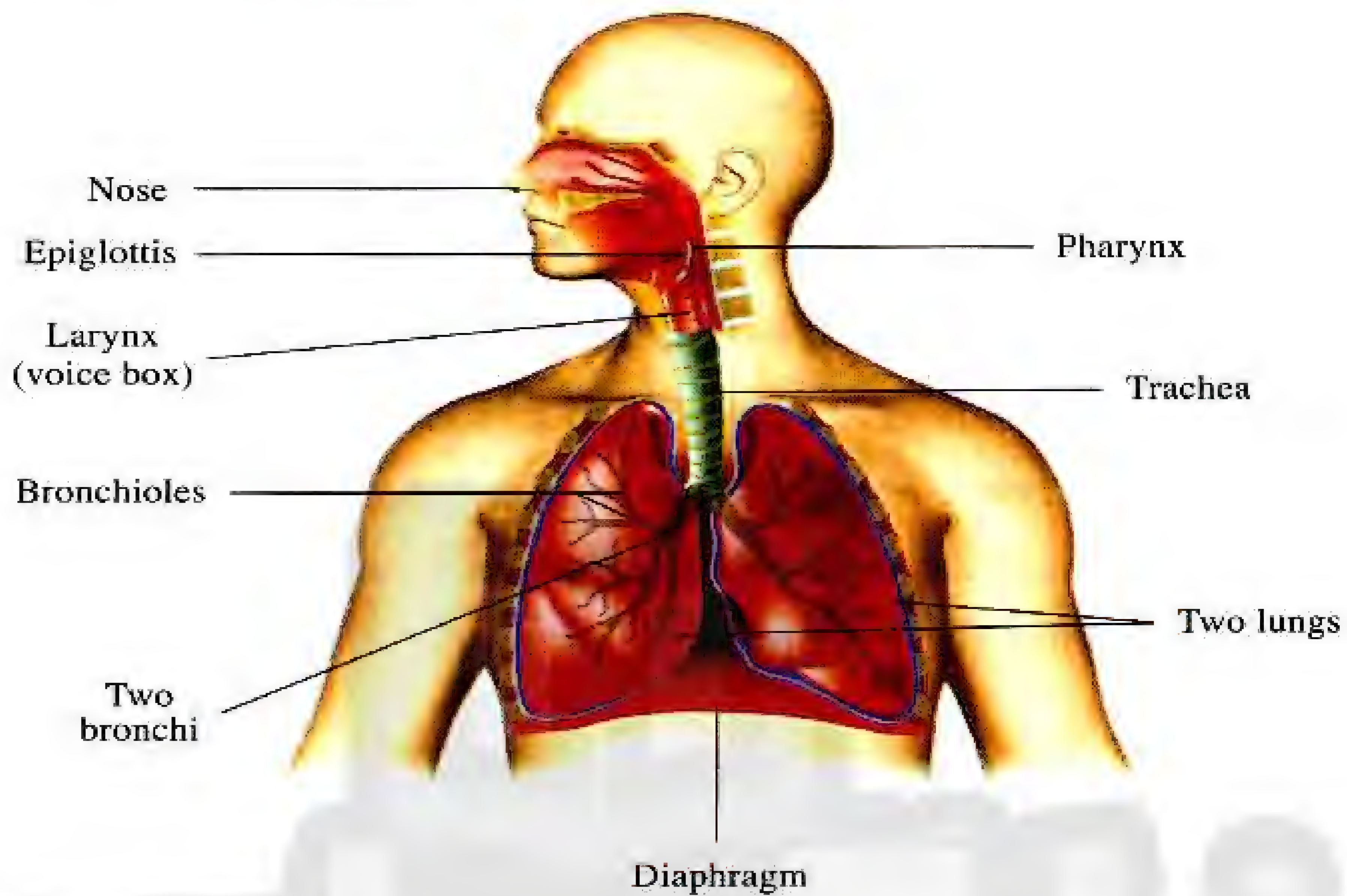
– Living organisms are classified according to their feeding into **producers, consumers** and **decomposers**.

8 Important drawings

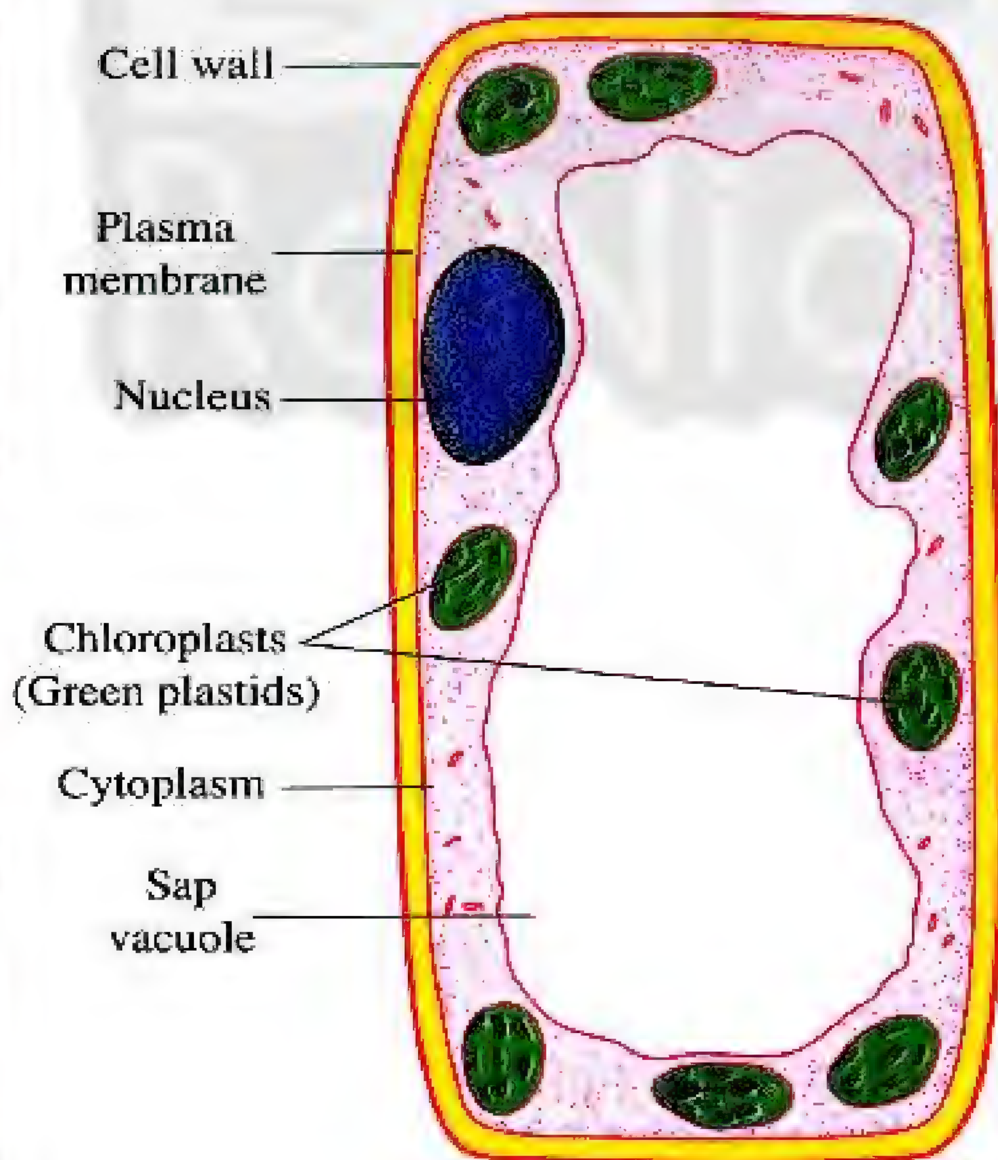


The digestive system

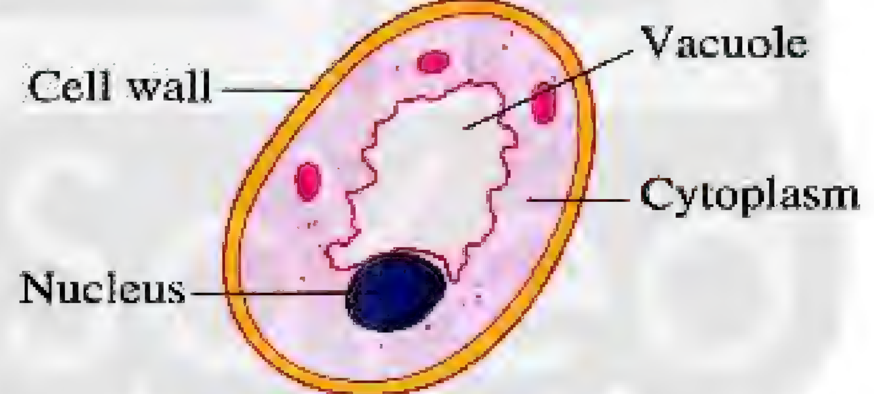
PART 2



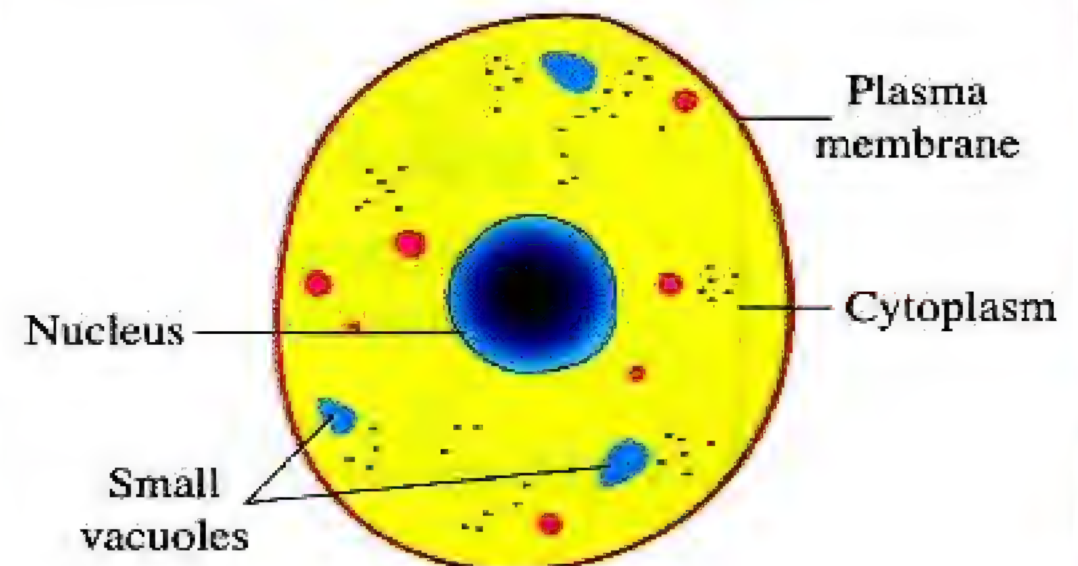
The human respiratory system



Plant cell



Yeast fungus



Animal cell

Final Revision on Unit 2



1 Definitions

Item	Definition
1. Energy :	It is the ability to do work.
2. Sound energy :	It is a form of energy that reaches ear causing hearing.
3. Static electricity :	It is a type of electricity that is formed from electric charges that remain on an object.
4. Current (Dynamic) electricity :	It is a type of electricity that is formed from the electric charges that flow through connecting wires for long distances forming the electric current.
5. Electric circuit :	It is the closed path of the electric current.

2 Importance or use

Item	Importance or use
1. Solar cell :	– It changes light (solar) energy into electric energy, that is used in houses. – It provides the satellites with electric energy to operate their pieces of equipment.
2. Battery :	It is used as a source of electric current in the electric circuits.
3. Connecting wires :	– They are used to connect all the circuit components together. – They are used to transfer the electric current from the battery to the lamp.
4. Electric switch :	It is used to close and open the electric circuit.

PART 2

3 Give reasons for

1. **You hear a sound when you tap a tuning fork.**
Because sound is produced from the vibration of objects.
2. **When you ride a bicycle, some changes of energy happen.**
Because the kinetic energy of the wheel changes by the dynamo into electric energy that changes into light energy through the lamp of the bicycle.
3. **On hammering a piece of iron, it becomes hot.**
Because the kinetic energy changes into heat energy.
4. **To move the children's toys, you must rotate the spring.**
Because by rotating the spring of the toy then leave it, the stored potential energy changes into kinetic energy.
5. **You feel warm when you rub your hands together.**
Because the kinetic energy changes into heat energy.
6. **The dynamo in the bicycle must touch the wheel.**
To change the kinetic energy of the wheel into electric energy.
7. **The electric fan rotates during the passing of the electric current.**
Because the electric energy changes into kinetic energy in the fan's motor.
8. **Satellites are provided with solar cells.**
Because the solar cells provide the satellites with electric energy to operate their equipment.
9. **On removing a nail from a wooden plate, the nail becomes warm.**
Due to the change of kinetic energy into heat energy.
10. **The solar cell is useful.**
Because : – It provides the satellites with electric energy to operate their equipment.
– It changes the light energy into electric energy, that is used in homes.
11. **Sometimes your hair stands when you combing it by a plastic comb.**
Due to the formation of the electric charges on the plastic comb during rubbing it by your hair.

12. **Attraction of small bits of paper to a ruler rubbed by your hair.**
Due to the formation of the electric charges on the ruler causing the attraction of paper bits.
13. **The attraction of a rubbed balloon to a wall.**
Because during rubbing the balloon, electric charges are formed on its surface causing its attraction to the wall.
14. **The balloon becomes charged after rubbing.**
Because rubbing objects generates electric charges on the object.
15. **Hearing a sound when you put off your clothes.**
Due to the formation of electric charges when parts of your body are rubbed by the clothes during motion.
16. • **Battery is a main part in the electric circuit.**
• **The importance of the battery in the electric circuit.**
Because it is the source of the electric current.
17. **Don't use the electric current of home when you perform an activity.**
Because the electric current of homes has high power that may cause death.
18. **The electricity is very important in our life.**
Because it is from the clean forms of energy that operates many home equipment.
19. **The presence of electric switch in the electric circuit.**
To open and close the electric circuit.

4 What happens if...?

1. **The Sun rays fall on a lens that is put over a piece of paper.**
The paper will be heated up and it may burn if it is exposed to the Sun rays for a long period of time.
2. **A piece of fixed rubber band is pulled, then it is left.**
A sound is produced due to the vibration of the piece of rubber band.
3. **You switch on the electric fan.**
The electric fan rotates due to the change of electric energy into kinetic energy.

PART 2

4. You remove a nail from a wooden plate. why ?
The nail becomes hot, because the kinetic energy changes into heat energy.

5. You switch on an electric lamp.
The electric energy changes into light energy.

6. Pulling the free end of a vertically hanged spring then leaving it free.
By pulling the free end of a vertically hanged spring the kinetic energy changes into potential energy and on leaving it free the potential energy changes into kinetic energy.

7. Rubbing your hair by a comb.
Your hair will stand and attract to the comb.

8. Getting a ruler rubbed by a piece of wool close to small bits of paper.
The small bits of paper will be attracted to the rubbed ruler.

9. Cutting off the electric current of your home for one day.
We can't operate many electric equipment as television, washing machine, computer and refrigerator.

10. Rubbing a plastic ruler by a piece of wool.
Some electric charges are formed on it.

11. Rubbing an inflated balloon by a piece of wool, then getting it close to your hair.
Your hair will be attracted to the charged inflated balloon.

12. Removing a battery from a closed electric circuit.
The lamp will not light.

13. Getting the charged balloon close to a wall.
The charged balloon will be attracted to the wall.

14. The electric switch is absent from the electric circuit.
We cannot close and open the electric circuit.

5 Comparison

Comparison between the static electricity and dynamic electricity :

Points of comparison	Static electricity	Dynamic electricity (Current electricity)
Definition :	It is the type of electricity that is formed from electric charges that remain on an object.	It is the electric charges that flow through connecting wires for long distances forming electric current.
Method of generation :	Rubbing.	Electric circuit.
Examples :	• Vision of lightning in the sky. • Hearing a sound when you put off your clothes. • Standing of your hair when you comb it by a plastic comb.	The current that is used to operate heater, refrigerator, television and computer.

6 Activities

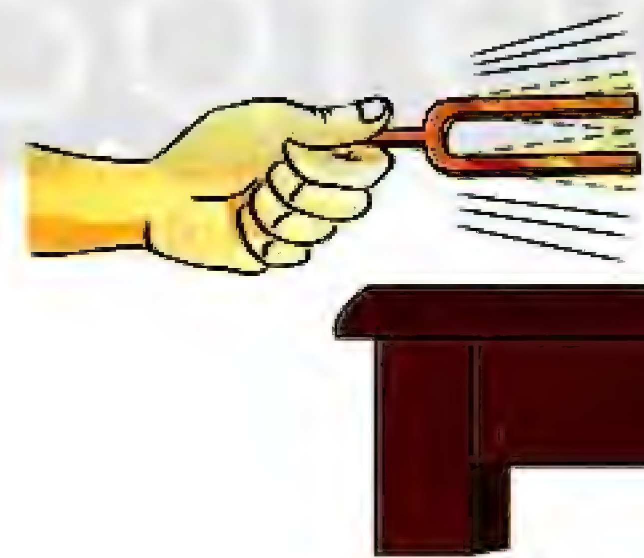


Activity 1 To prove that sound is produced due to the vibration of objects.



Steps:

1. Catch a tuning fork from its handle and tap it on a wooden table.
2. Get the two prongs of the tuning fork near one of your ears quickly.





Observation:

You hear a sound.

3. Touch one of the two prongs of the fork by your finger after tapping it.



Observation:

You feel the vibration of its two prongs.



Conclusion:

Sound is produced (originated) due to the vibration of objects.



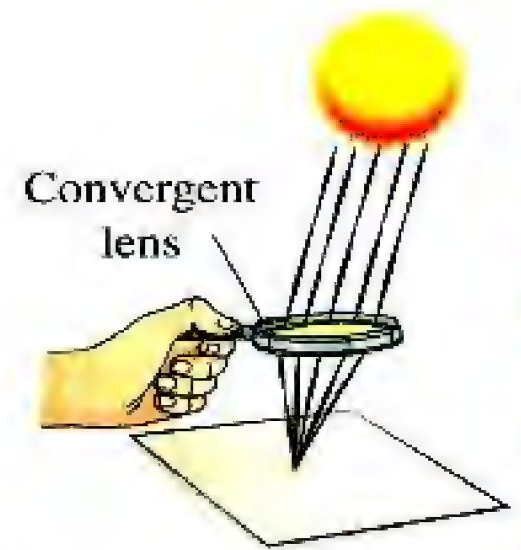
PART 2



Activity 2 To prove that the light energy changes into heat energy.

Steps:

1. Put the convergent (magnifying) lens over the paper at a few centimetres.
2. Expose the lens to the Sun rays to focus these rays at a point of paper.





Observation:

The piece of paper will heat up and it may burn if it is exposed to the Sun rays for a long period of time.



Conclusion:

The light energy changes into heat energy.

Main Points



- Forms of energy :
  Potential energy – Light energy – kinetic energy – Heat energy – Electric energy – Chemical energy – Sound energy.
- **Battery stores** chemical energy.
- **There are two types of electricity which are :**
  a. Static electricity.
  b. Current (dynamic) electricity.
- **Some phenomena related to the static electricity :**
  • Lightning in the sky.
  • Standing of your hair during combing it by a plastic comb.
  • Hearing a sound when you put off your clothes.
- Static electricity can be generated by **rubbing**.
- The electric current is **movable electric charges.**
- To obtain an electric current or dynamic electricity, we need to form an **electric circuit**.
- When the electric current flows through a wire in **one direction**, it is called **a direct current**.
- The electric circuit contains **battery, lamp, electric switch and connecting wires**.

- To obtain an electric current, the **electric circuit** must be **closed**.
- **Current (Dynamic) electricity** is used in operating some electric equipment such as television, washing machine, computer, vacuum cleaner, heater and refrigerator.
- **Methods for decreasing (rationalizing) the consumption of electricity** :
  - Using the solar cells to produce electricity from the solar energy.
  - Turning off the lamps when leaving a place.
  - Turning off all the unused equipment.
- **Changes of energy :**

Equipment	Used energy	Produced energy
• Leaving a spring after filling it.	Potential energy.	Kinetic energy.
• Violin – Guitar – Knocking on a door.	Kinetic energy.	Sound energy.
• Rubbing hands. • Hammering on a piece of iron. • Removing a nail from a piece of wood.	Kinetic energy.	Heat energy.
• Dynamo.	Kinetic energy.	Electric energy.
• Electric lamp.	Electric energy.	Light energy.
• Electric fan – Washing machine – Electric mixer.	Electric energy.	Kinetic energy.
• Solar heater.	Light energy (Solar energy).	Heat energy.
• Solar cells.	Light energy (Solar energy).	Electric energy.
• Electric heater.	Electric energy.	Heat energy.
• Radio-loudspeakers.	Electric energy.	Sound energy.
• Battery (Dry cell).	Chemical energy.	Electric energy.



PART 3

Final Examinations 2019

Important note :

There is an additional question at the end of the school examinations on the parts which are canceled from the syllabus of the previous year.



1 Cairo Governorate — Patriarchal College

Answer the following questions :

1. [A] Complete the following :

1. .... is considered as one of the producer but .... is considered as one of decomposer.
2. Sound generates due to .... of object.
3. Protein is digested in .... and ....
4. Energy is the ability to do ....

[B] Write the function of :

1. Plasma membrane : ....
2. Solar cell : ....
3. Epiglottis : ....

2. [A] Give reasons for :

1. The number of respiration times increases in running case.
....
2. Yeast fungus has economic importance.
....
3. Green algae is considered as producers.
....

[B] Write the scientific term :

1. The energy stored in batteries. (....................)
2. Living organisms depend on other living organisms in their food. (....................)
3. The most important muscle in respiration. (....................)

3. [A] What happens when ... ?

1. We put a convergent lens over a paper in presence of sunlight.
....

PART 3

2. There is no decomposer in nature.

....

....

[B] Choose the correct answer :

1. Kinetic energy changes into sound energy in ....
   a. violin. b. electric fan.
   c. knocking on the door. d. (a) and (c) are correct.
2. Which of the following can exist in a plant cell and won't exist in an animal cell ....
   a. nucleus. b. chloroplasts.
   c. cytoplasm. d. cell membrane.
3. Plants produce .... in the process of photosynthesis.
   a. nitrogen b. oxygen
   c. CO_2 d. water vapour
4. Absorption of water from food remains occurs in ....
   a. rectum. b. large intestine.
   c. stomach. d. small intestine.

4. [A] Compare between each of the following :

Motor	Dynamo
....	....
....	....
....	....

[B] Put (✓) or (✗) then correct the wrong sentences :

1. Digestion of starch starts in stomach. ( )

....

2. The animal cell is surrounded by a cell wall. ( )

....

3. The first part in the small intestine is duodenum. ( )

....

4. Blood capillaries in the nose filter the air. ( )

....

Additional questions

Give reasons for :

1. Attraction of small bits of paper to a ruler rubbed by your hair.

....

2. The attraction of a rubbed balloon to a wall.

....

3. Don't use the electric current of home when you perform an activity.

....

2 Cairo Governorate — East Nasr City Educational Zone

Answer the following questions :

1. Write the scientific term :

1. It is the ability to do work. (....................)
2. The unit of structure and function in the living organism. (....................)
3. Living organisms depend on other living organisms in their food. (....................)
4. The juice which digest proteins incompletely. (....................)
5. The organ that mixes food with saliva in the mouth. (....................)
6. The energy which produced from the electric lamp. (....................)

2. [A] Correct the underlined words :

1. Exchange of gases occurs in **diaphragm**. (....................)
2. A hawk is an example of **producers**. (....................)
3. During photosynthesis process **carbon dioxide** is evolved. (....................)
4. **Cytoplasm** controls the substances that enter or leave the cell. (....................)

[B] Mention the changes of energy in the following :

	Used energy	Produced energy
1- Electric fan.	....	....
2- Rubbing hands.	....	....

PART 3

3. Complete the following statements:

1. Digestive canal supplementaries are salivary glands, ... and ....
2. Pharynx is the common path between .... system and .... system.
3. In battery, ... energy changed into .... energy.
4. From the forms of energy .... and ....
5. Respiration occurs in two processes .... process and .... process.
6. Plant cell is characterized from animal cell by having .... and ....

4. [A] Choose the correct answer :

1. Starch digestion starts by the ....
   a. gastric juice. b. saliva. c. bile juice.
2. .... are examples of decomposers.
   a. Reptiles b. Fungi c. Plants
3. Undigested food is assembled in the ....
   a. large intestine. b. stomach. c. duodenum.
4. .... is a form of energy that reaches ear causing hearing.
   a. Light b. Sound c. Heat

[B] Give reasons for :

1. After hammering on a piece of iron, it becomes hot.
   ....
   ....
2. The trachea is lined with cilia.
   ....
   ....

Additional questions

What happens when ... ?

1. Rubbing your hair with a comb.
   ....
2. Getting a ruler rubbed with a piece of wool close to small bits of paper.
   ....
3. Rubbing a plastic ruler with a piece of wool.
   ....

3 Cairo Governorate — Notre Dame Des Apotres School

Answer the following questions :

1. Complete the following statements :

1. .... and .... are found in plant cell and not found in animal cell.
2. The small intestine is divided into .... and ....
3. Diaphragm moves .... during inhalation and moves .... during exhalation.
4. Photosynthesis process produces .... and ....
5. In the dry cell, ... energy changes into .... energy.
6. .... is considered as one of the producers but .... is considered as consumer.

2. [A] Write the scientific term :

1. The living organisms which get their food by decomposing remains of living organisms. (...............)
2. Changing food from complex form into simple one. (...............)
3. The ability to do work. (...............)
4. Process by which plant makes its own food. (...............)
5. Form of energy reaches the ear causing hearing. (...............)
6. A process by which oxygen enters the lungs. (...............)

[B] Mention the function :

1. Digestive system : ....
2. Alveoli : ....
3. Yeast fungus : ....

3. [A] Correct the underlined words :

1. Digestion of starch starts in **stomach**. (...............)
2. **Dynamo** changes electric energy into kinetic energy. (...............)
3. **Plasma membrane** fills the cell cavity and all vital process is completed in it. (...............)

PART 3

4. **Inhaled** air contains carbon dioxide gas and water vapour. (....................)
5. Number of teeth in adult is **20**. (....................)
6. Tissue is made of a symmetric set of **organs**. (....................)

[B] Give reasons for :

1. On rubbing your hands together, you feel heat.

....

2. The nose is lined with mucous layer and hairs.

....

3. The liver helps in digesting fats.

....

4. [A] Choose the correct answer :

1. .... is the muscle that separates between thoracic cavity and abdominal cavity.
   a. Diaphragm b. Liver c. Mouth
2. The common cavity between digestive system and respiratory system is ....
   a. mouth. b. pharynx. c. esophagus.
3. Bread mold fungus is an example of ....
   a. producers. b. consumers. c. decomposers.
4. The digested food is absorbed in the ....
   a. larynx. b. stomach. c. small intestine.
5. Solar heaters change light energy into .... energy.
   a. chemical b. heat c. sound
6. .... allows food to pass from pharynx to stomach.
   a. Mouth b. Esophagus c. Large intestine

[B] What will happen if... ?

1. Tongue is not found in the mouth.

....

2. Sun rays fall on convergent lens that put over a paper.

....

3. The epiglottis is removed from larynx.

....

Additional questions

What happens when ... ?

1. Cutting off the electric current of your home for one day.
....
2. Rubbing an inflated balloon with a piece of wool, then getting it close to your hair.
....
3. Removing a battery from a closed electric circuit.
....

4 Cairo Governorate — Manor House International Schools

Answer the following questions :

1. Complete the following statements :

1. Stomach secretes .... to digest ....
2. Green .... are present in the plant cell, but not in the animal cell.
3. During .... process, the diaphragm moves down and the ribs move upward.
4. .... is supported by incomplete cartilaginous rings to be opened all the time.
5. .... process is the breaking down of complex food into simple substances to let the body benefited from them.

2. Write the scientific term :

1. The energy produced from the piano. (....................)
2. A unicellular organism that is used in making bread and alcohol. (....................)
3. A gas that is produced in the exhalation process and turns clear limewater into milky. (....................)
4. Tiny air sac found in the two lungs. (....................)
5. The organ that mixes food with saliva. (....................)
6. The main source of energy on the Earth's surface. (....................)

PART 3

3. [A] Choose the correct answer :

1. The organ that turns food inside the mouth cavity and mixes it up with saliva is the ....
   a. esophagus. b. teeth. c. tongue. d. pharynx.
2. The photosynthesis process takes place in the .... of the plant.
   a. roots b. green parts c. seeds d. all the previous
3. .... is an example of consumers that feed on producers.
   a. Cow b. Snake c. Tiger d. Lion
4. Radio produces .... energy.
   a. light b. sound c. potential d. heat
5. The Sun provides us with ....
   a. light. b. heat. c. pushing force. d. (a) and (b).

[B] Correct the underlined words :

1. **Gastric juice** helps in digestion of fats. (..................)
2. Tissue is made up of symmetric set of **organs**. (..................)
3. Absorption of food occurs in **stomach**. (..................)

4. [A] Give reasons for :

1. The trachea has incomplete cartilaginous rings in its wall.
   ....
   ....
2. It's preferred for human to skip in crowded places.
   ....
   ....
3. You must not eat fast meals.
   ....
   ....

[B] Compare between each of the following :

Points of comparison	Plant cell	Animal cell	Yeast fungus
Nucleus	....	....	....
Chloroplasts	....	....	....

Additional questions

[A] Suggest a way to decrease the consumption of electricity.

....

....

....

[B] What is meant by ... ?

Static electricity : ....

....

5 Cairo Governorate — Saint Paul College

Answer the following questions :

1. [A] Complete the following statements :

1. The plant cell is surrounded by ...., while the animal cell is surrounded by ....
2. In photosynthesis process .... gas is absorbed and .... gas is produced.
3. Stomach secrets .... juice, while pancreas secretes .... juice.
4. In solar cell .... energy changes into .... energy.

[B] Mention on use :

1. Nucleus : ....
2. Liver : ....

2. [A] Write the scientific term :

1. Biological process takes place in the green parts of plant. (.........................)
2. The main source of energy on the Earth. (.........................)
3. A tube in respiratory system that is lined with cilia. (.........................)
4. It controls the substances that enter or leave the cell. (.........................)

[B] What happens when ... ?

1. Rubbing your hands together.

....

2. Removing the epiglottis from a human body.

....

PART 3

3. [A] Give reasons for :

1. Nose lined with mucous and hairs.

....

....

2. Animals and human are consumers.

....

....

3. Trachea is supported with incomplete cartilaginous rings.

....

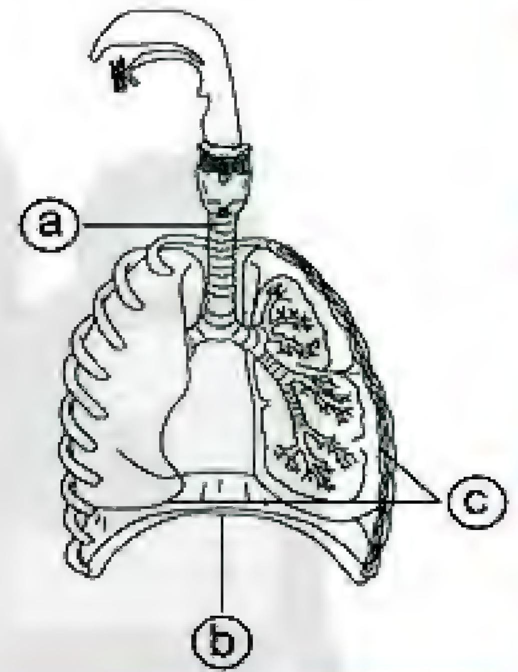
....

[B] Label the figure :

ⓐ ....

ⓑ ....

ⓒ ....



4. [A] Choose the correct answer :

1. Energy stored in the spring of a toy car is ....
   a. light. b. potential. c. chemical.
2. Undigested food is stored in the ....
   a. duodenum. b. small intestine. c. large intestine.

[B] What is meant by ... ?

1. Energy : ....

2. Cell : ....

[C] Mention the factors necessary to make photosynthesis process.

....

....

Additional questions

[A] What is meant by ... ?

1. Dynamic electricity.

....

2. The electric circuit.

....

[B] What is the function of ... ?

1. Battery in electric circuit.

....

2. Connecting wires.

....

6 Cairo Governorate — Basateen & Dar El-Salam Educational Administration

Answer the following questions :

1. [A] Choose the correct answer :

1. Digested food is absorbed by ....
   a. esophagus. b. small intestine.
   c. stomach. d. large intestine.
2. Decomposers are important because they ....
   a. get rid of dead bodies. b. used in many industries.
   c. increase soil fertility. d. all the previous.
3. The .... is an example of unicellular living organisms.
   a. frog b. snake
   c. yeast fungus d. bean plant

[B] Complete the missing words in the following diagram :

1. System ⟶ .... ⟶ Tissues ⟶ ....

2. a. ....
   b. ....



PART 3

[C] Mention one the function for :

1. Yeast fungus : ....
2. Larynx : ....

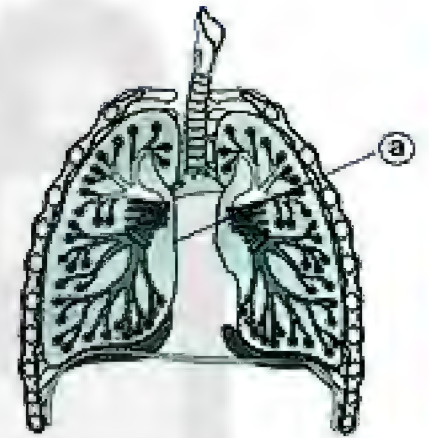
2. [A] Write the scientific term :

1. The building unit of all living organisms. (..........)
2. The ability to do work. (..........)
3. The main source of energy on the Earth. (..........)
4. The kind of teeth which grind food. (..........)

[B] Examine the human below then answer the following questions.



(a) 1. This organ is called ....
2. It is a part of the human .... system.
3. It secretes .... juice which helps in digestion of ....



(b) 1. Organ ⓐ is called ....
2. It is a part of the human .... system.
3. It contains sacs called .... where gases ....

[C] Cross out the odd word :

1. Anus - Villi - Mouth - Esophagus. (..........)
2. Tuning fork - Speaker - Lamp - Bell. (..........)

3. [A] What happens when ... ?

1. You blow in clear limewater.

....

2. Rubbing your hands together.

....

[B] Examine the equipment below and mention the type of energy :

	Used energy	Produced energy
1. Lamp		
2. Fan		
3. Electric heater		
4. Radio		

[C] Choose true or false :

1. Exhalation air contains CO_2 gas. (True – False)
2. Nucleus is responsible for cell division. (True – False)
3. The green algae are decomposers. (True – False)
4. Solar cell produces electricity. (True – False)

4. [A] Give reasons for :

1. Nose contains hairs and mucous.

....

2. You hear a sound when you tap a tuning fork.

....

[B]

	Animal cell	Plant cell
1. Cell wall		
2. Chloroplast		
3. Nucleus		
4. Sap vacuole		

[C] Classify the following organisms into :

(Producer - Consumer - Decomposer)

1. Mushroom .... 2. Green algae .... 3. Rabbit .... 4. Human ....

Additional questions

Compare between the static electricity and dynamic electricity.

....
....
....

7 Cairo Governorate — El- Gomhouria Language School

Answer the following questions :

1. [A] Complete the following sentences :

1. Photosynthesis process produces .... and ....

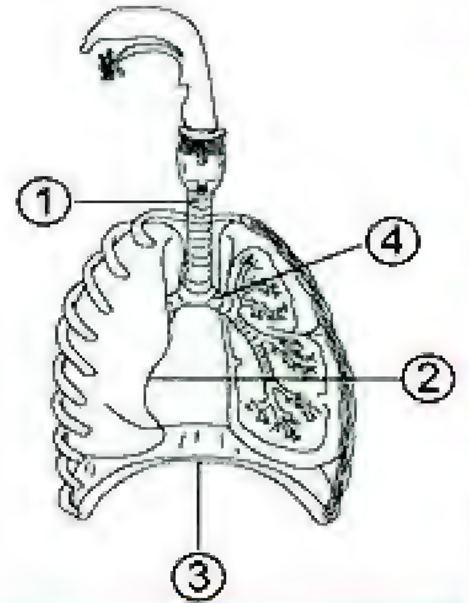
PART 3

2. The stomach secretes .... which digested ....
3. .... energy changes into .... energy by dynamo.
4. Digestive canal supplementaries are salivary glands, ... and ....

[B] Look at the opposite figure, then answer :

Label the figure :

① ....
② ....
③ ....
④ ....



2. [A] Write the scientific term :

1. The ability to do work. (....................)
2. A part of the small intestine, where the food is absorbed. (....................)
3. Tiny air sacs found in the two lungs. (....................)
4. The energy stored in spring of a toy car. (....................)
5. It the common cavity leads to esophagus and trachea. (....................)
6. The process by which a human obtains energy from digested food. (....................)

[B] Give reasons for :

1. Liver helps in digestion of fats.

....

2. On rubbing your hands together, you feel with heat.

....

3. Nose has blood capillaries.

....

3. [A] Choose the correct answer :

1. We can test the presence of starch in plant leaves by using ....
   a. limewater. b. iodine solution. c. alcohol. d. sunlight.
2. The undigested food goes to the ....
   a. stomach. b. small intestine. c. large intestine. d. tongue.
3. The function of nervous system is ....
   a. digestion. b. sensation. c. excretion. d. respiration.
4. .... energy is produced due to the vibration of objects.
   a. Light b. Sound c. Heat d. Electric

[B] What happens if ... ?

1. Knocking a tuning fork on a wooden table.

....

2. The diaphragm muscle contracts and moves down.

....

[C] What is the importance of each of the following ... ?

1. Solar cell.

....

2. Yeast fungus.

....

4. [A] Correct the underlined words :

1. **Cell wall** organizes the biological operations inside the cell. (..................)
2. Grinding food to make swallowing easy is the **incisors**. (..................)
3. **Cilia** closes the larynx during swallowing of food. (..................)
4. In the electric heater, the electric energy is changed into **chemical** energy. (..................)

[B] Mention the type of produced energy in the following :

1. Electric lamb : ....
2. Washing machine : ....

[C] Compare between plant and animal cell according to :

Points of comparison	Plant cell	Animal cell
1. Chloroplasts		
2. Nucleus		
3. Cell wall		

Additional questions

[A] Put (✓) or (✗) :

1. Small bits of paper are attracted to a rubbed plastic ruler. (   )
2. The only type of electricity is the static electricity. (   )

[B] What is meant by ... ?

The electric circuit.

....

PART 3

8 Giza Governorate — Beverly Hills Language School

Answer the following questions :

1. **[A] Complete the following sentences :**

1. The living organisms are classified into ...., ... and ....
2. Carbon dioxide gas causes the turbidity of ....
3. Gases exchange occurs in the ....
4. .... is a biological process that takes place in the green parts of the plant to make its food.
5. Starch digestion starts in ....
6. The moving car has .... energy.
7. .... gas is produced by the green plants during the photosynthesis process.

[B] Choose the correct answer :

1. Digestion of protein starts in ....
   a. stomach. b. mouth. c. large intestine.
2. In the inhalation process the diaphragm .... and the volume of thoracic (chest) cavity increases.
   a. contracts b. relaxes c. moves up
3. The .... is an example of unicellular living organisms.
   a. frog b. snake c. yeast fungus

2. **[A] Put (✓) or (✗) :**

1. Plant is the main source of food and energy for man and animals. ( )
2. The respiration process includes three processes which are inhalation, exhalation and absorption. ( )
3. The group of similar cells forms a tissue. ( )
4. There are tiny blood vessels inside nose to filter the air from dust. ( )
5. Energy is the ability to do work. ( )
6. By rubbing your hands the sound energy changes into kinetic energy. ( )

[B] What happens when ... ?

1. Salivary glands stop secreting saliva.

....

2. Adding the bile juice to a mixture of oil and water.

....

3. There is no plant on the Earth.

....

3. [A] Write the scientific term :

1. Process of transferring the digested food from the small intestine to the blood. (....................)
2. A sac-like organ that secreted gastric juice. (....................)
3. The first part of the small intestine that is connected to the stomach. (....................)
4. Living organisms get their food through decomposing organic wastes as dead bodies, plant remains and decayed food. (....................)
5. A fluid that fills the cell. (....................)
6. The cell that contains chloroplasts. (....................)

[B] What is the function of ... ?

Organ	Function
1. Rings in the trachea	....
2. Epiglottis	....

4. Give reasons for :

1. Breathing through nose is preferable.
   Because ....
   ....
   ....
2. Decomposers are very important organisms.
   Because ....
   ....
3. You must not eat fast meals.
   Because ....
   ....
4. Food must be digested into simple substances.
   Because ....

PART **3**

Additional questions

[A] What is meant by ... ?



Electric circuit.

....

[B] Choose the correct answer :

1. Key is used to ....
   a. close the electric circuit only.
   b. open the electric circuit only.
   c. cut the electric wires.
   d. (a) and (b).
2. .... is the source of the electric charges in the electric circuit.
   a. The electric switch
   b. The battery
   c. The electric wire
   d. The electric lamp

9 Giza Governorate — Kerdasa Educational Zone

Answer the following questions :

1. [A] Complete with the words between brackets :

(sound - liver - Two lungs - chloroplasts - Cell wall - pancreas)

1. Bile juice is secreted by ...., but pancreatic juice is secreted by ....
2. The radio changes the electric energy into .... energy.
3. .... occupy the thoracic cavity and surrounded by ribs.
4. ....,.............. are present in plant cell, but absent in animal cell.

[B] Classify the following living organisms according to the way of feeding :

(Tiger - Green plants - Yeast fungus - Cow - Bread mold fungus - Green algae)

Producers	Consumers	Decomposers
....	....	....
....	....	....

2. Write the scientific term :

1. The building unit of body of living organisms. (..................)
2. It's an organ that secretes gastric juice to digest proteins. (..................)

3. The ability to do work. (....................)
4. It closes trachea during swallowing to prevent food from entering trachea. (....................)
5. Living organisms can make their food by photosynthesis process. (....................)
6. Juice is secreted by salivary glands and changes starch into sugar. (....................)

3. Choose the correct answer :

1. .... help in exchange of gases.
   a. Stomach b. Diaphragm c. Alveoli
2. .... is living organism feed on dead bodies, plant remains, decayed food.
   a. Producer b. Consumer c. Decomposer
3. .... is responsible for tasting and mixing food with saliva.
   a. Teeth b. Pharynx c. Tongue
4. .... energy is produced from vibration of object.
   a. Heat b. Light c. Sound
5. There are .... pairs of salivary glands in mouth.
   a. three b. four c. five
6. Nose is lined with............... to filter air.
   a. hairs and mucous b. water c. saliva

4. [A] Correct the underlined words :

1. Stomach, esophagus are organs of **respiratory** system. (....................)
2. **Lung** separates chest cavity from abdominal cavity. (....................)
3. Electric fan changes the **sound** energy into kinetic energy. (....................)

[B] Match from column (A) to column (B) :

Column (A)	Column (B)
1. Gas enters the two lungs in inhalation process	a. cell wall.
2. It gives the plant cell definite shape	b. organs.
3. System consists of a group of	c. carbon dioxide gas.
	d. oxygen gas.

1. .... 2. .... 3. ....

PART 3

Additional questions

[A] Choose the correct answer :

1. There are two types of electricity, which are ....
   a. static and thermal electricity.
   b. dynamic and thermal electricity.
   c. light and heat energy.
   d. static and current electricity.
2. Static electricity is produced from ....
   a. flow of electric charges in wires.
   b. rubbing your hair by a plastic ruler.
   c. putting a battery inside a torch.
   d. (a) and (c).

[B] What happens when ... ?

Getting the charged balloon close to a wall.

....

10 Giza Governorate — October Educational Zone

Answer the following questions :

1. [A] Complete by using the following words :

(inhalation - mouth - exhalation - oxygen - anus - carbon dioxide)

1. The digestive canal starts with .... and ends with ....
2. Air enters the two lungs during the .... process and leaves them during .... process.
3. In photosynthesis process, ... gas is produced and .... gas is absorbed.

[B] Cross the odd word out :

1. Molars – Stomach – Canines – Incisors. (....................)
2. Cytoplasm – Fungus – Nucleus – Cell wall. (....................)
3. Trachea – Lungs – Pancreas – Nose. (....................)

2. [A] Put (✓) or (✗) :

1. Digested food is absorbed in the small intestine. (   )
2. We should eat fruits rich in vitamin C. (   )
3. The animal cell is surrounded by the cell wall. (   )

4. Producers are living organisms that can make their food by photosynthesis process. ( )
5. Yeast fungus is used in making bread and alcohol. ( )

[B] Give reason for :

We should breath through the nose.
Because nose .... and .... air.

3. Choose the correct answer :

1. Gases exchange occurs in the ....
   a. trachea. b. stomach. c. alveoli.
2. Bile juice is secreted by ....
   a. liver. b. salivary gland. c. pancreas.
3. .... is called the voice box.
   a. Esophagus b. Pharynx c. Larynx
4. A group of similar cells form ....
   a. organ. b. tissue. c. system.
5. The number of teeth in each jaw is ....
   a. 16 b. 20 c. 25
6. Dog is considered ....
   a. producer. b. consumer. c. decomposer.

4. [A] Write the scientific term :

1. The building unit of living organism. (..............)
2. The ability to do work. (..............)
3. The organ that mixes food with saliva. (..............)

[B] Match from column (A) to column (B) :

Column (A)	Column (B)
1. Epiglottis	a. secrete saliva.
2. Heat energy	b. closes trachea during swallowing.
3. Salivary glands	c. produced from the heater.

1. .... 2. .... 3. ....

PART 3

Additional questions

[A] What happens when ... ?

The electric switch is absent from the electric circuit.

....

[B] Put (✓) or (✗) :

1. The only type of electricity is the static electricity. ( )
2. Lightning in the sky is a phenomenon related to static electricity. ( )

11 Alexandria Governorate — El-Agamy Educational Zone

Answer the following questions :

1. Complete the following statements :

1. The digestive system is divided into .... and ....
2. Nose is lined with .... and hairs to filter the air from dust and ....
3. The plant cell is characterized from animal cell by the presence of .... and ....

2. [A] Choose the correct answer :

1. The protein digestion starts in ....
   a. mouth. b. stomach. c. rectum.
2. The required gas for respiration process is ....
   a. oxygen. b. carbon dioxide. c. nitrogen.
3. The energy produced from the electric fan is .... energy.
   a. electric b. sound c. kinetic

[B] Write the scientific term :

1. A system that carries out the transport function in the human being. (........................)
2. The part of the respiratory system in which gases exchange occurs. (........................)
3. A group of organs working together. (........................)

3. [A] Put (✓) or (✗) :

1. The respiratory system exists in the thoracic cavity. ( )
2. The energy stored in the spring of a toy is heat energy. ( )
3. The diaphragm moves up during inhalation process. ( )

[B] Give reasons for each of the following :

1. Decomposers have an environmental importance.

....

....

2. Green plants are called producers.

....

....

4. [A] Write the function of each of the following :

1. Plasma membrane :

....

....

2. Liver :

....

....

[B] Examine the following figure then answer :

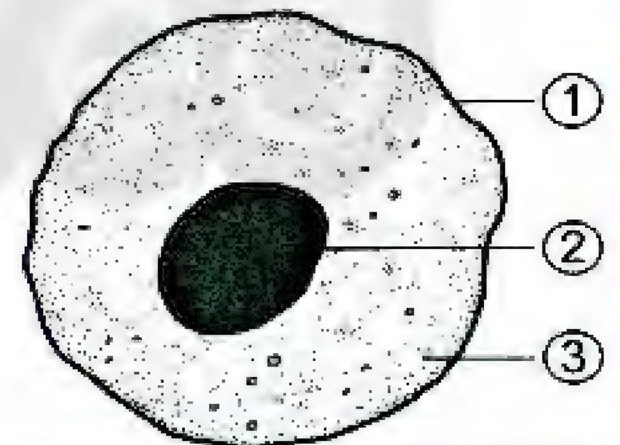
(a) This figure represents ....

(b) Label the figure :

① ....

② ....

③ ....



Additional questions

Correct the underlined words :

1. <u>**Static electricity**</u> is movable electric charges. (....................)
2. Current electricity is produced due to the flow of <u>**electric circuit**</u> through connecting wires. (....................)
3. The electric current flows in one direction in a wire is called <u>**static electricity**</u>. (....................)

PART 3

12 Alexandria Governorate — Brilliance Language School

Answer the following questions :

1. Complete the following sentences :

1. Diaphragm is a muscle that separates the .... cavity and the .... cavity.
2. The plant cell is differentiated from animal cell by the presence of .... and ....
3. We use yeast fungus in making .... and ....
4. Proteins are digested in .... and in ....
5. In the electric lamp the .... energy changes into .... energy.
6. The digestive canal starts with .... and ends with ....

2. [A] Put (✓) or (✗) :

1. Undigested food is stored in large intestine. (   )
2. The tissue consists of some organs. (   )
3. Rubbing your hands together produced chemical energy. (   )
4. Lung contains cartilaginous rings. (   )

[B] Give reasons for :

1. Nose has hairs and mucous.

....

....

2. You must avoid smoking.

....

....

3. [A] Write the scientific term :

1. Changing the food from a complex form into a simpler one. (....................)
2. It is the building unit of the living organism's body. (....................)
3. A biological process that takes place in the green parts only in the plants. (....................)

[B] Choose from (B) what suits in (A) :

(A)	(B)
1. Stomach 2. Salivary gland 3. Liver	a. secretes saliva. b. secretes bile juice. c. secretes gastric juice.

1. .... 2. .... 3. ....

4. [A] Choose the correct answer :

1. .... is responsible for the cell division.
   a. Cytoplasm b. Plasma membrane c. Nucleus
2. The spring of a toy car stores .... energy.
   a. heat b. potential c. sound
3. .... gas changes limewater into milky.
   a. Carbon dioxide b. Oxygen c. Nitrogen
4. .... is called the voice box.
   a. Pharynx b. Trachea c. Larynx
5. The number of teeth in an adult person is ....
   a. 32 b. 23 c. 20
6. Digested food is absorbed in the ....
   a. stomach. b. small intestine. c. large intestine.

[B] Correct the underlined words :

1. Alveoli are found in **trachea**. (...............)
2. **Sound** energy is the energy produced from dry cell. (...............)
3. **Consumers** get their food through decomposing dead bodies. (...............)

Additional questions

[A] Complete :

1. .... is a clean form of energy.
2. The two types of electricity are .... and ....
3. .... is the type of electricity, that is formed from electric charges that remain on an object.

[B] Give a reason for :

Hearing a sound when you put off your clothes.

....

PART 3

13 Qaliubya Governorate — Al Resala Language School

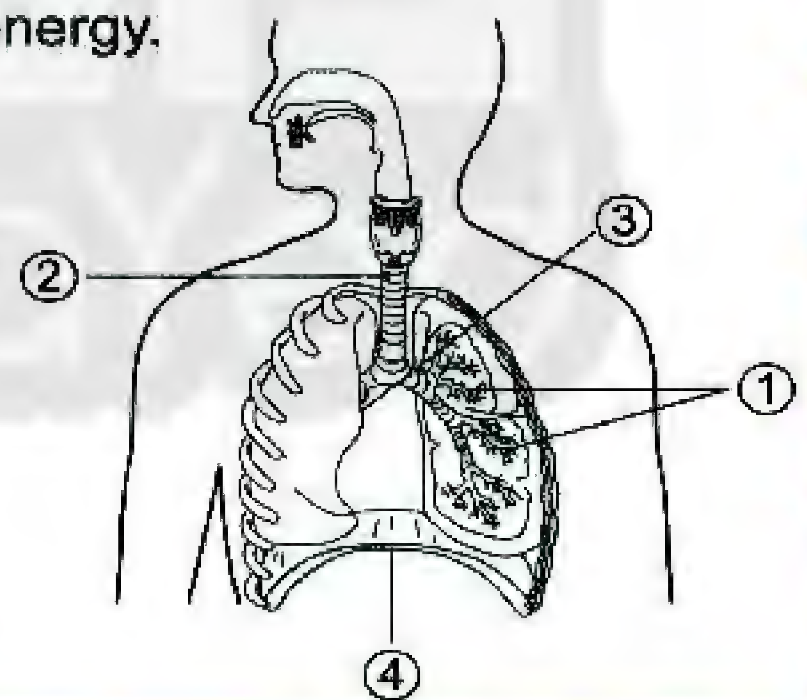
Answer the following questions :

1. [A] Complete the following statements :

1. Salivary glands secrete .... juice that changes .... into ....
2. Photosynthesis process produces .... and ....
3. .... is the ability to do work.
4. Bread mold fungus is an example of ...., while .... is an example consumers.
5. When you rub your hands together, ... energy changes .... into .... energy.
6. .... and .... are two structures that are found in plant cell only rather than animal cell.
7. Proteins are digested in .... and ....
8. In photosynthesis process, the plant absorbs .... and .... from the soil, and .... gas from the air.
9. ...., ... and .... are forms of energy.

[B] Write the labels :

① ....
② ....
③ ....
④ ....



2. [A] Put (✓) or (✗) :

1. The energy produced from solar heater is heat energy. ( )
2. The cell wall is found only in the animal cell. ( )
3. Sound stops when the vibration of a tuning fork stops. ( )
4. On knocking the door, the kinetic energy changes into sound energy. ( )
5. Gases exchange occurs in the trachea. ( )
6. The heart is a part of your digestive system. ( )

[B] Classify the following living organisms into consumers, producers, or decomposers :

(Yoghurt bacteria - Shark - Bean plant - Bread mold fungus - Rat - Green algae)

Producers	Consumers	Decomposers
....	....	....
....	....	....

[C] Write the labels :

Ⓐ ....

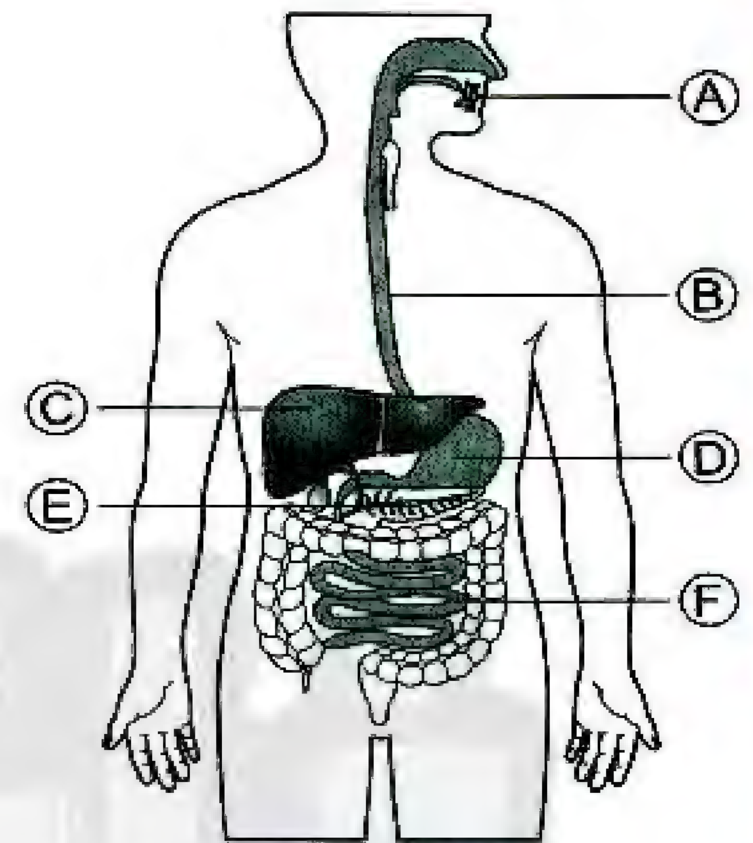
Ⓑ ....

Ⓒ ....

Ⓓ ....

Ⓔ ....

Ⓕ ....



3. [A] Write the scientific term :

1. A form of energy that produces from the solar heater. (....................)
2. The energy produced from the Sun. (....................)
3. Tiny structures spread in the cytoplasm of the plant cells and are responsible for the photosynthesis process. (....................)
4. The organ that secretes bile juice. (....................)
5. Living organisms that help us to get rid of dead bodies and plant remains. (....................)
6. A process by which air containing oxygen enters the lungs. (....................)

[B] Give reasons for :

1. Green plants can make their own food.

....

....

2. The exhaled air differs from the inhaled air.

....

....

PART 3

[C] Complete the following table :

Example	The energy used
1. The radio.	....
2. The guitar.	....
3. The electric fan.	....
4. The solar cell.	....

4. [A] Choose the correct answer :

1. The large intestine is a / an ....
   a. system. b. organ. c. cell.
2. A hawk is an example of ....
   a. producer. b. consumer. c. decomposer.
3. The yeast fungus is surrounded by a ....
   a. cell wall. b. cytoplasm. c. plasma membrane.
4. Living organisms get the needed energy from the ....
   a. digestion. b. respiration. c. excretion.
5. Plants can make their own food by the .... process.
   a. digestion b. photosynthesis c. respiration
6. Kinetic energy can be changed into ....
   a. light energy. b. sound energy. c. no correct answer.

[B] Correct the underlined words :

1. **Oxygen gas** is necessary for photosynthesis process. (....................)
2. Tissue is made up of a group of similar **organs**. (....................)
3. **Cilia** close the larynx during swallowing. (....................)
4. The **yeast fungus** has chloroplasts. (....................)
5. A complete digestion of protein substance occurs in **stomach**. (....................)
6. Limewater turns into milky in the presence of **nitrogen**. (....................)

[C] Choose from column (A) what suits column (B) :

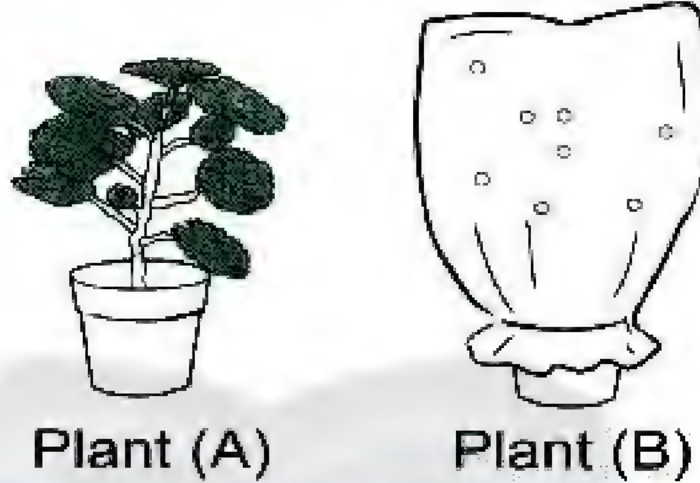
Column (A)	Column (B)
1. It is the juice that digests fats. 2. .... is a source of light energy. 3. .... is used to test the presence of starch. 4. .... is important to keep your respiratory system healthy.	a. Vitamin C b. Iodine solution c. Bile juice d. The Sun

1. .... 2. .... 3. .... 4. ....

[D] Look at the figures below, then answer :

a. The leaves of plant .... make their own food by the photosynthesis process.

b. The leaves of plant .... become yellow and weak.



Plant (A) Plant (B)

Additional questions

[A] What happens when ... ?

The electric switch is absent from the electric circuit.

....

[B] Put (✓) or (✗) :

1. Static electricity is a type of electricity that is produced due to the remaining of the electric charges on a body. ( )
2. The current electricity can be generated by rubbing an inflated balloon with a piece of wool. ( )
3. The electric wires are the sources of the electric current. ( )

14 Sharkia Governorate — New Salhia Language School

Answer the following questions :

1. [A] Complete the following statements :

1. The digestive canal starts with .... and ends with ....
2. Solar heater produces .... energy while solar cell produces .... energy.
3. The plant cell is surrounded by .... while the animal cell is surrounded ....
4. In photosynthesis process plants absorb .... gas and produce .... gas.

PART 3

[B] Give reasons for :

1. Nose contains hairs and mucous.

....

2. Liver secretes bile juice.

....

2. [A] Write the scientific term :

1. The building unit of the living organisms. (..................)
2. The living organisms that can make their food by photosynthesis process. (..................)
3. Ability to do work. (..................)
4. The organ that mixes food with saliva. (..................)
5. The energy produced by piano and radio. (..................)
6. The juice that is secreted by stomach. (..................)

[B] What the function of :

1. Yeast fungus ....
2. Molars ....
3. Epiglottis ....

3. [A] Choose the correct answer :

1. Lung is considered from components of .... system.
   a. respiratory b. nervous c. digestive
2. .... is found in plant cell and not found in animal cell.
   a. Cell wall b. Nucleus c. Cytoplasm
3. Radio produces .... energy.
   a. light b. sound c. light

[B] Correct the underlined words :

1. Gases exchange takes place in **trachea**. (..................)
2. The first part of small intestine is called **pharynx**. (..................)
3. The limewater is used to detect the presense of **oxygen**. (..................)

4. [A] Put (✓) or (✗) :

1. Bacteria is an example of decomposer. ( )
2. The system is a group of tissues. ( )
3. Digested food is absorbed in the stomach. ( )
4. The energy stored in the toy car is potential energy. ( )
5. Kinetic energy changed into heat energy by rubbing your hand. ( )
6. The trachea belongs to respiratory system. ( )

[B] Classify the living organisms into producer, consumer and decomposer :

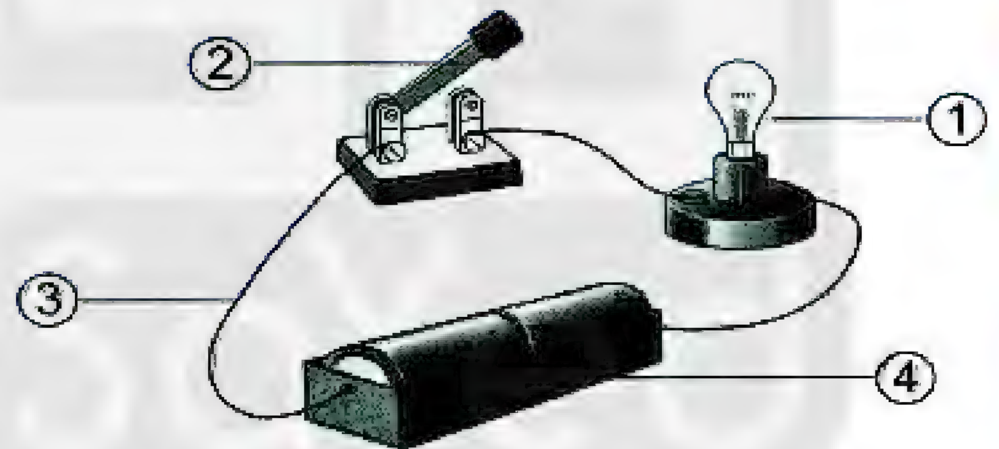
(Dog - Plant - Lion - Human - Fungi - Bacteria)

1. Producer : ....
2. Consumer : ....
3. Decomposer : ....

Additional questions

[A] Label the figure :

① ....
② ....
③ ....
④ ....



[B] What the function of no. ④ ?

....

15 Menofia Governorate — Shbien El-Koum Educational Zone

Answer the following questions :

1. [A] Complete the following statements :

1. The pharynx is a common cavity leads to .... and ....
2. The small intestine is divided into .... and ....
3. From the forms of energy .... and ....
4. The dynamo changes .... energy into .... energy.

PART 3

[B] What is the function of each of the following :

1. The salivary glands.

....

....

2. The liver.

....

....

2. [A] Write the scientific term :

1. They are living organisms that can make their own food by themselves during photosynthesis process. (....................)
2. A form of energy reaches ear causing hearing. (....................)
3. It is the ability to do work. (....................)
4. It is a muscle separates thoracic cavity from abdominal cavity. (....................)

[B] Give reasons for :

1. Breathing through nose is preferable than through mouth.

....

....

2. The yeast fungus has an economic importance.

....

....

3. [A] Choose the correct answer :

1. From the decomposers ....
   a. bread mold fungus. b. cow. c. corn plant.
2. The energy produced from the solar cell ....
   a. kinetic. b. electric. c. sound.
3. Which of the following can be existed in plant cell and cannot be existed in animal cell ....
   a. chloroplasts. b. nucleus. c. cytoplasm.
4. The plant produces .... gas in photosynthesis process.
   a. oxygen b. nitrogen c. carbon dioxide

[B] What happens when... ?

1. Removing the epiglottis from the human body.

....

....

2. The Sun rays fall on a convergent lens that is put over a paper.

....

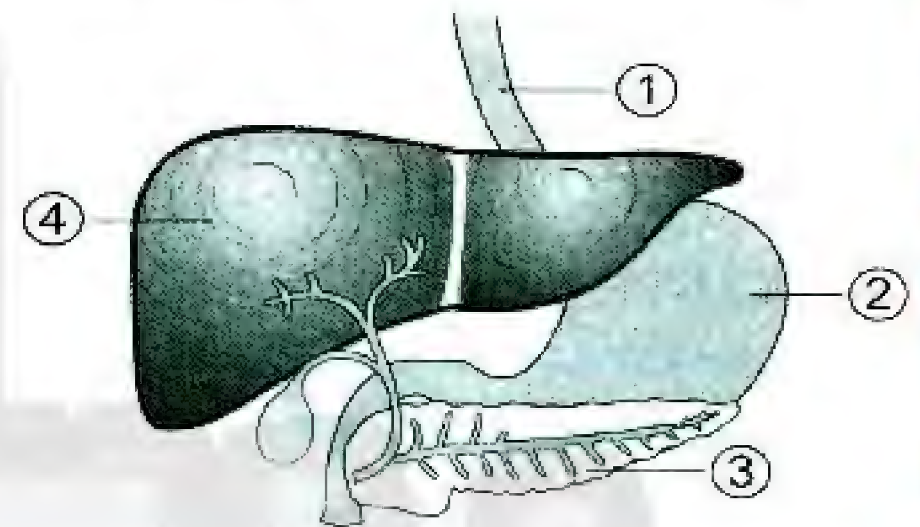
....

4. [A] Put (✓) or (✗) :

1. The sound is produced due to vibration of objects. ( )
2. The electric fan changes the electric energy into kinetic energy. ( )
3. The energy stored in the spring of car toy is potential energy. ( )
4. The air enters the two lungs during exhalation process. ( )

[B] Label the figure :

① ....
② ....
③ ....
④ ....



Additional questions

[A] Compare between the static electricity and dynamic electricity. (according to definition and example).

....

....

[B] Choose the correct answer :

1. Lightning that occurs in the sky is a phenomenon related to ....
   a. static electricity. b. dynamic electricity.
   c. potential energy. d. kinetic energy.
2. Rubbing the ruler in your hair ....
   a. generates static electricity. b. attracts the small bits of paper.
   c. produces electric charges on it. d. all the previous answers.

16 Gharbia Governorate — Gharbia Educational Directorate

Answer the following questions :

1. [A] Complete the following statements :

1. Starch digestion starts in ....

PART 3

2. In the body of the living organism, each organ consists of ....

3. On rotating the spring of the children's toy, it stores .... energy.

4. Sound produces due to the .... of the objects.

[B] Match from column (A) what suits it from column (B) :

(A)	(B)
1. Oxygen gas	a. helps in fats digestion.
2. Liver	b. causes turbidity of clear limewater.
3. Light energy	c. is stored energy in electric lamp.
4. Carbon dioxide gas	d. necessary for the plant respiration.
	e. is used energy in solar heater.

1. .... 2. .... 3. .... 4. ....

2. [A] Write the scientific term :

1. The ability to do work. (....................)

2. The type of living organisms which helps us to get rid of dead bodies and plant remains. (....................)

3. The cell component which organizes the biological operations. (....................)

4. The common cavity between digestive system and respiratory system. (....................)

[B] Give reasons for :

1. Food must be digested into simple substances.

....

....

2. You feel warm when you rub your hands together.

....

....

3. [A] Choose the correct answer :

1. The .... system distributes the digested food and oxygen all over the body

a. respiratory b. circulatory c. urinary d. nervous

2. Chemical energy is stored in the ....

a. dry cell. b. solar cell. c. piano. d. radio.

3. Kinetic energy changes into electric energy in the ....
   a. washing machine. b. dynamo of bicycle.
   c. electric mixer. d. electric motor.
4. Absorption of digested food takes place in ....
   a. rectum. b. duodenum. c. stomach. d. ileum.

[B] Correct the underlined words :

1. **Larynx** prevents the food from entering the lungs during swallowing. (....................)
2. Human and lions are examples of **producers**. (....................)
3. **Bacteria** is used in making the bread. (....................)
4. **Electric heater** provides satellites with electric energy. (....................)

4. [A] Look at the opposite figure then answer the following :

1. Write the labels :
   ① ....
   ② ....
   ③ ....
   ④ ....
2. The organ number ① is lined with .... and .... to filter the air from dust.
3. The organ number ② is permanently open due to the presence of ....
4. The organ number ③ contains tiny air sacs called .... where gases exchange takes place.

[B] What happens when... ?

1. You switch on the electric fan.
   ....
   ....
2. There are no chloroplasts in the plant leaves.
   ....
   ....

PART 3

Additional questions

[A] Give a reason for :

The balloon becomes charged after rubbing.

....

[B] Correct the underlined words :

1. The **switch** is the source of the electric current. (....................)
2. To transfer the electric current from the battery to a lamp, we can use **battery**. (....................)
3. Computer, television and refrigerator are operated by **static electricity**. (....................)

17 Dakahlia Governorate — Belqas Educational Zone

Answer the following questions :

1. [A] Choose the correct answer :

1. Light energy changes into electric energy in the ....
   a. solar heater. b. electric lamp. c. solar cells. d. electric fan.
2. .... is the organ in the respiratory system.
   a. Liver b. Lung c. Pancreas d. Rectum
3. Digested food is absorbed in the ....
   a. esophagus. b. stomach. c. ileum. d. large intestine.
4. During the respiration process gases exchange occurs in ....
   a. trachea. b. nose. c. mouth. d. alveoli.
5. .... is responsible for the cell division.
   a. Cell wall b. Vacuole c. Nucleus d. Green plastid
6. .... energy is stored in the battery.
   a. Sound b. Heat c. Chemical d. Kinetic

[B] Classify the following living organisms into producers, consumers and decomposers :

(Wheat plant - Human - Yeast fungus - Lion - Green algae - Bacteria)

Producers	Consumers	Decomposers
....	....	....
....	....	....

2. [A] Complete the following :

1. Liver secretes .... which is poured in .... of small intestine.
2. At the top of trachea, there are .... and ....
3. .... and .... are the products of photosynthesis process.
4. Sound is a form of .... and it originates due to .... of objects.

[B] Arrange the following organs according to the passage carbon dioxide gas during exhalation process :

(Nose - Trachea - Alveoli - Pharynx - Blood - Larynx)

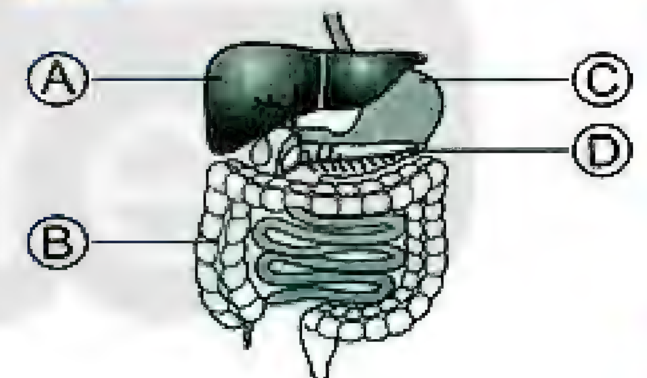
....

....

3. [A] Correct the underlined words :

1. In the motor, **light** energy changes into kinetic energy. (..................)
2. The tissue consists of a group of **organs**. (..................)
3. Animal cell is surrounded by **cell wall**. (..................)
4. In exhalation process diaphragm moves **down**. (..................)
5. Number of teeth in each jaw in an adult is **20 teeth**. (..................)
6. Saliva digests **protein**. (..................)

[B] Look at the opposite figure, then answer the questions:



1. Label the figure :

Ⓐ ....
Ⓑ ....
Ⓒ ....
Ⓓ ....

2. What is the function of part Ⓑ ? ....

....

4. [A] Write the scientific term of each of the following :

1. It is the ability to do work. (..................)
2. It is a common cavity between trachea and esophagus. (..................)
3. A process by which oxygen gas enters the two lungs. (..................)
4. It mixes food with saliva to help in food swallowing. (..................)
5. A structure lined trachea to eject up strange objects. (..................)
6. The building unit of the living organism's body. (..................)

PART 3

[B] Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Smoking	a. filter the air from dust and microbes.
2. Hairs and mucous in the nose	b. changes kinetic energy to heat energy.
3. Electric heater	c. leads to cancer causing death.
4. Rubbing your hands	d. converts electric energy into heat energy.

1. .... 2. .... 3. .... 4. ....

[C] What happens when... ?

Removing the epiglottis from a human body

....

Additional questions

[A] Put (✓) or (✗) :

1. The direct current is the electric current, that flows in a wire in two directions. ( )
2. The electric switch is used to close the electric circuit only. ( )

[B] Complete the following statements :

1. Lightning in the sky is a phenomenon related to the ....
2. Hearing a sound on putting off your clothes is due to ....

18 Ismailia Governorate — Science Inspectorate

Answer the following questions :

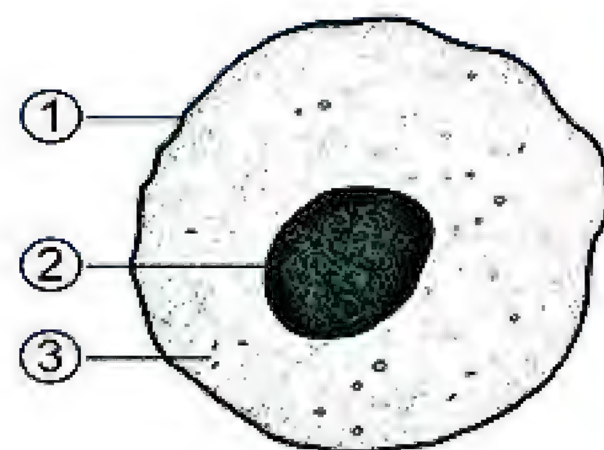
1. [A] Complete the following :

(potential energy - small intestine - Epiglottis - alveoli)

1. Digestion of food is completed in ....
2. The exchange of gases occurs in ....
3. The energy stored in the spring of toy car is ....
4. .... closes the trachea during swallowing.

[B] Look at the following figure, then answer :

1. The opposite figure shows the .... cell.
2. Label the figure.
   ① ....
   ② ....
   ③ ....



[C] Correct the underlined words :

1. Large intestine ends with **mouth**. (........................)
2. The number of teeth in adult is **22**. (........................)
3. Heat energy produced from the **radio**. (........................)
4. In the **electric fan**, electric energy changes into light energy. (........................)

2. [A] Choose the correct answer :

1. Plants use .... gas in photosynthesis process.
   a. oxygen b. nitrogen c. carbon dioxide
2. .... muscle helps in mechanism of respiration.
   a. Diaphragm b. Esophagus c. Stomach
3. The electric energy produces by ....
   a. piano. b. dry cell. c. electric fan.
4. The .... cell contains green plastids and cell wall.
   a. animal b. human c. plant

[B] Give reasons for :

1. Nose has blood capillaries.

....

2. You hear a sound when you tap a tuning fork.

....

[C] Match from column (A), what suits it from column (B) :

(A)	(B)
1. Nucleus	a. it is a common cavity leads to esophagus and trachea.
2. Pharynx	b. leads to cancer and causing death.
3. Iodine solution	c. makes cell division.
4. Smoking	d. used to detect the presence of starch.

1. .... 2. .... 3. .... 4. ....

PART 3

3. [A] Complete the following table :

Points of comparison	Gastric juice	Saliva	Bile juice
Secreted by :	....	....	....
Its function :	....	....	....

[B] Write the scientific term :

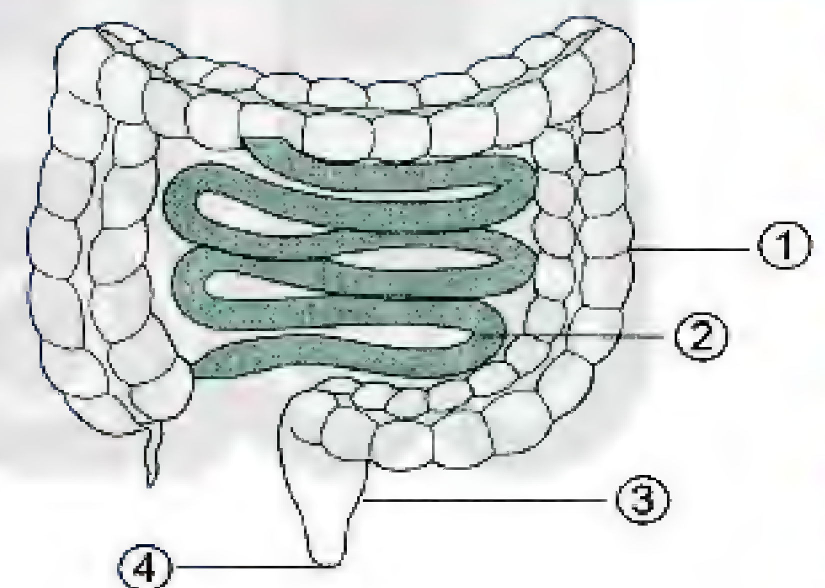
1. A group of similar cells. (..................)
2. The ability to do work. (..................)
3. A process by which oxygen gas enters the lungs. (..................)
4. The structure that controls the substances that enter or leave the cell. (..................)

[C] How can you keep the digestive system healthy ?

1. ....
2. ....

4. [A] Look at figure and answer the following :
Name the organs

① ....
② ....
③ ....
④ ....



[B] Classifiy the following into :

(Snake - Lion - Green plant - Yeast fungus)

Producers	Consumers	Decomposer
....	....	....

[C] What is the form of energy that produced from :

1. Knocking on the door a class room. (..................)
2. Rubbing your hand together. (..................)
3. Running of pupil. (..................)
4. Solar cells. (..................)

Additional questions

[A] Give a reason for :

Battery is a main part in the electric circuit.

....

[B] Write the scientific term :

1. Electricity, which causes the standing of hair during combing it with a plastic comb. (....................)
2. It is the electric charges, that flow through connecting wires for long distances forming the electric current. (....................)
3. The electric current, that flows through the wire in one direction. (....................)

19 Port Said Governorate — Port Said Integrated Language School

Answer the following questions :

1. [A] Complete the following sentences :

1. .... is the ability to do work.
2. The plant cell is characterized by the presence of .... and ....
3. Exhalation air contains .... and water vapour.
4. .... juice helps to digest fats and it is secreted from liver.
5. The .... system helps body to get rid of harmful substances.

[B] What's meant by ... ?

1. Producers : ....
2. The animal cell : ....
3. Pharynx : ....
4. Digestion : ....

[C] How can you keep the digestive system healthy ?

1. ....
2. ....

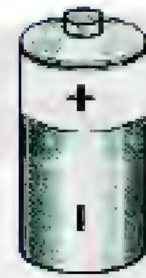
PART 3

2. [A] Write one word for each of the following statements (scientific term) :

1. An organ whose length is 7 metres and it is divided into duodenum and ileum. (........................)
2. A muscle that separates thoracic cavity from abdominal cavity. (........................)
3. It is responsible for the cell division. (........................)
4. A gas that is produced during the photosynthesis process. (........................)
5. They are living organisms that feed on dead bodies. (........................)

[B] Mention the form of energy that is produced from pictures below :







1. .... energy
2. .... energy
3. .... energy

[C] Give one reason for each of the following :

1. Plants can make their own food by themselves.

....

2. You must eat fruits rich in vitamin (C) like orange and guave.

....

3. [A] Choose the correct answer :

1. .... is the energy that is produced from heater.
   a. Electric energy b. Heat energy c. Sound energy
2. Gases exchange happens in the .... between the air and the blood.
   a. alveoli b. trachea c. diaphragm
3. Salivary glands secrete saliva which digests ....
   a. fats. b. starches. c. proteins.
4. The adults have .... canines in each jaw.
   a. 6 b. 4 c. 2
5. .... are living organisms that consist of only one cell.
   a. Producers b. Unicellular c. Consumers
6. .... is a process in which human gets energy by burning digested food.
   a. Respiration b. Absorption c. Digestion
7. At the top of trachea there is a voice box which is called ....
   a. larynx. b. pharynx. c. epiglottis.

8. Water is absorbed in the .... from food remains.

a. esophagus b. rectum c. stomach

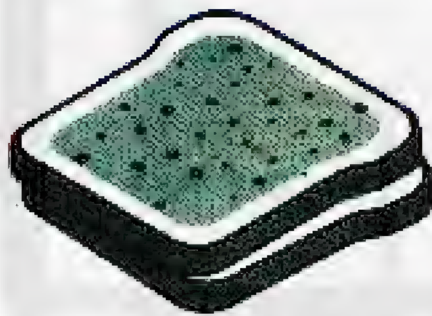
[B] Mention one function for each of the following :

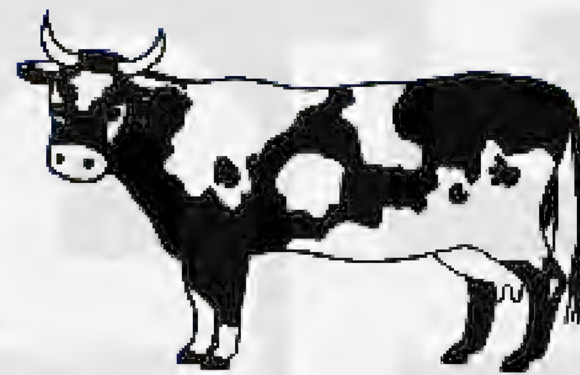
1. Tongue : ....
2. Mucous and hairs in nose : ....
3. Plasma membrane : ....
4. Nervous system : ....

4. [A] Compare between the following (according to definition) :

Inhalation process	Exhalation process
....	....
....	....

[B] Look at the given figures about the living organisms, then answer :


(1)


(2)

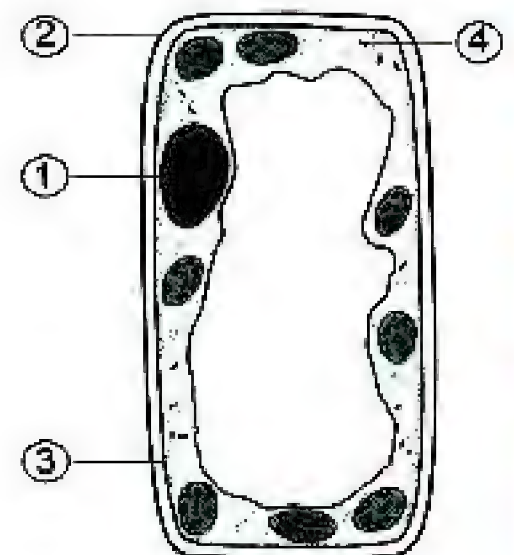

(3)

Complete the following sentences by using words below :

(producers - consumers - decomposers)

1. Number (1) is one of the ....
2. Number (2) is one of the ....
3. Number (3) is one of the ....

[C] Look at the opposite figure then answer :



a. Complete the following by using these words :
(Nucleus - Cell wall - Plasma membrane - Cytoplasm)

① ....
② ....
③ ....
④ ....

b. This figure presents ....

PART 3

Additional questions

[A] Complete :

1. .... is from the methods that is used to generate static electricity.
2. The .... can be formed on a balloon rubbed with a piece of wool.

[B] Write the scientific term :

A closed path of the electric current. (....................)

20 Kafr El-Sheikh Governorate — Science Inspectorate

Answer the following questions :

1. [A] Choose the correct answer :

1. .... changes electric energy into kinetic energy.
   a. Motor of fan b. Electric lamp c. Dynamo
2. .... is responsible for cell division.
   a. Cytoplasm b. Nucleus c. Plasma membrane
3. There are .... pairs of salivary glands.
   a. two b. three c. four
4. .... is produced due to vibration of objects.
   a. Light b. Electricity c. Sound

[B] Correct the underlined words :

1. **Mucous layers** warm the air which passes through the nose. (....................)
2. In electric lamp electric energy changes into **kinetic** energy. (....................)

2. [A] Give reasons for :

1. When exhaled air is blown in limewater it gets turbid.
....
....
2. Dead animals disappear.
....
....

[B] Write the scientific terms by choosing the correct word from the followings :

(Sunlight - Animal cell - Energy - Pharynx)

1. A common cavity between digestive system and respiratory system. (....................)

2. The source of energy for plants. (............)
3. The building unit of an animal body. (............)
4. The ability to do work. (............)

3. **[A] Choose from column (B) which suits it column (A) :**

(A)	(B)
1. Plants manufacture their own food by	a. incomplete cartilaginous rings.
2. Smoking is harmful to	b. bread and alcohol.
3. Trachea is a tube supported with	c. photosynthesis.
4. Yeast fungus is used to make	d. respiratory system.

1. .... 2. .... 3. .... 4. ....

[B] Explain what could be happened in the following cases :

1. We don't chew the food well.

....

2. We eat fruits rich in vitamin C.

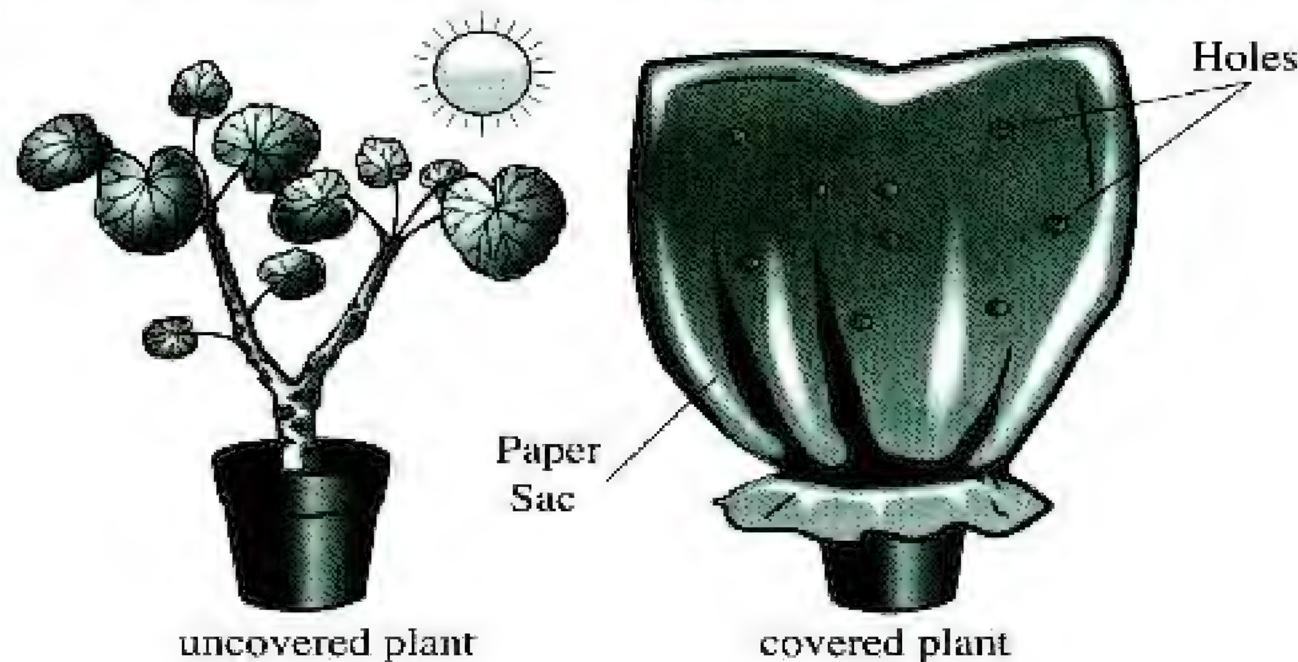
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4. **[A] Put (✓) or (✗) :**

1. Piano gives light energy. ( )
2. Bile juice helps to digest fats. ( )
3. Lion is a consumer animal feeds on producers (green plants). ( )
4. Thoracic cavity enlarges during inhalation. ( )

[B] Complete the following sentences :

The covered plant becomes yellowish and .... this is related to the absence of sunlight and the plant stopped manufacturing its ....



PART 3

Additional questions

[A] Complete :

1. The flow of the electric charges through conductors produces .... electricity.
2. .... is an electric current, that flows in one direction.
3. To obtain the electric current, we need to form ....

[B] Give a reason for :

Electricity is very important in our life.

....

21 El-Beihera Governorate — Ismail El-Habrouk official Language School

Answer the following questions :

1. [A] Complete the following sentences :

1. The plant cell is surrounded by ...., while the animal cell surrounded by ....
2. The small intestine consists of two parts which are .... and ....
3. In the battery .... energy changes into .... energy.
4. The respiration process includes .... and ....

[B] Give one use or function of each other :

1. Liver : ....
2. Yeast fungus : ....

2. [A] Write the scientific term :

1. The organ which absorbs the water from the food remains. (....................)
2. The cell component which play an important role in the cell division. (....................)
3. Tiny air sacs found in the two lungs. (....................)
4. The gas that turns the clear limewater into turbid. (....................)

[B] Give reasons for :

1. Trachea is lined with cilia.

....

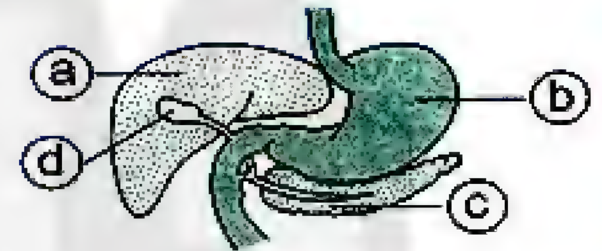
2. You feel warm when you rub your hands together.

....

3. [A] Choose the correct answer :

1. Radio produces .... energy.
   a. light b. sound c. potential d. heat
2. The undigested food is stored in the ....
   a. stomach. b. small intestine. c. large intestine. d. duodenum.
3. In both animal and plant cell .... exist(s).
   a. plasma membrane b. green plastids
   c. cell wall d. liver
4. .... is called the voice box.
   a. Larynx b. Diaphragm c. Epiglottis d. Alveoli

[B] The opposite figure represents a part of the digestive system :



1. ⓐ ....
   ⓑ ....
   ⓒ ....
   ⓓ ....
2. What is the importance of organ ⓑ ?
   ....

4. [A] Correct the underlined words :

1. Energy is the ability to do **force**. (....................)
2. The colour of iodine solution turns into **red** in the presence of starch. (....................)
3. All the biological operation of the cell occur in **cell membrane**. (....................)
4. Large intestine ends with **ileum**. (....................)

[B] What happens when ... ?

1. The small intestine is removed from the human body.
   ....
   ....
2. There is no chloroplasts in the corn plant cells.
   ....
   ....

PART 3

Additional questions

[A] Choose the correct answer :

1. The reason for attracting the powdered sugar to the rubbed balloon is ....
   a. the formation of electric charges on the balloon.
   b. the colour of the balloon.
   c. the formation of salty powder.
   d. all the previous answers.
2. .... is the electric charges, that flow through connecting wires for long distances.
   a. Current electricity
   b. Static electricity
   c. Electric circuit
   d. (a) and (c)

[B] Put (✓) or (✗) :

1. A battery and connecting wires are only the components of the electric circuit. ( )
2. The connecting wires are used to transfer the electric current from the battery to the lamp. ( )

22 El-Menia Governorate — Deirmwas official Language School

Answer the following questions :

1. Choose the correct answer :

1. Stomach secretes .... juice.
   a. bile b. gastric c. saliva
2. .... muscle helps in the mechanism of respiration.
   a. Diaphragm b. Liver c. Stomach
3. .... are examples of producers.
   a. Cows b. Humans c. Green plants
4. .... is found in the plant cell and not found in the animal cell.
   a. Cytoplasm b. Chloroplast c. Nucleus
5. The .... produces sound energy.
   a. heater b. piano c. electric lamp
6. Saliva helps in the digestion of ....
   a. fats. b. proteins. c. starch.

2. **Put (✓) or (✗) :**

1. The teeth number in adults is 32. ( )
2. Larynx is called the voice box. ( )
3. In the motor the electric energy changes into kinetic energy. ( )
4. Plants need oxygen gas to make photosynthesis process. ( )
5. The exchange of gases occurs in the stomach. ( )
6. The electric lamp changes heat energy into sound energy. ( )

3. **[A] Write the scientific term :**

1. It is a common cavity leads to esophagus and trachea. (..................)
2. The ability to do work. (..................)
3. The process by which oxygen enters the two lungs. (..................)
4. The form of energy which produced from the electric fan. (..................)

[B] Give reasons for :

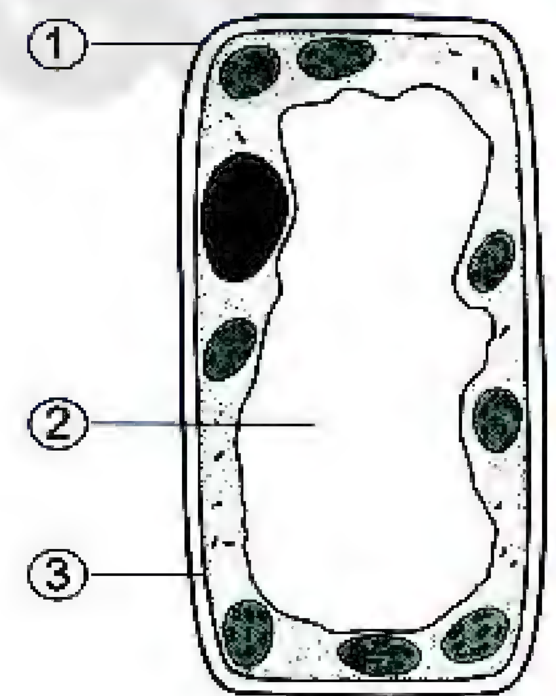
1. Bile juice is very important.

....

2. Consumers and decomposers cannot make photosynthesis process.

....

4. **[A] Answer the following questions :**



1. The figure represents .... cell.
2. Label the figure :

① ....

② ....

③ ....

[B] What happens when ...?

1. There were no hair in the nose.

....

2. The absence of decomposers from the nature.

....

PART 3

Additional questions

[A] Write the scientific term :

1. The tool that is used to close and open the electric circuit. (........................)
2. They are used to transfer the electric current from battery to lamp. (........................)

[B] Correct the underlined words :

The **switch** is the source of the electric current. (........................)

23 Qena Governorate — Qena Educational Directorate

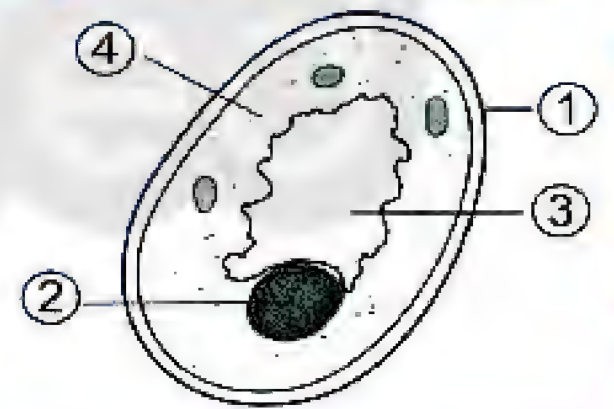
Answer the following questions :

1. [A] Write the scientific term :

1. The building unit in a living organism. (........................)
2. The ability to do work. (........................)
3. A process by which oxygen enters the lungs. (........................)
4. It controls substances that enter or leave the cell. (........................)

[B] The following figure represents the structure of yeast fungus write the labels :

① ....
② ....
③ ....
④ ....



2. [A] Correct the underlined words :

1. Heater produces **electric** energy. (........................)
2. Iodine solution gives **red** colour when adds to starch. (........................)
3. Undigested food is stored in the **small** intestine. (........................)
4. The spring of toy stores **kinetic** energy. (........................)

[B] Give reasons for :

1. Nose has blood capillaries.

....

2. You feel warm when you rub your hands together.

....

3. [A] Complete the following statements :

1. .... muscle helps the mechanism of respiration.
2. We get .... energy from the solar cells.
3. Light energy changes into electric energy in ....
4. The pharynx is a common cavity between .... system and .... system.
5. The piano gives .... energy, while lamp gives .... energy.

[B] Give an example to each of the following :

1. An organ in a plant. (........................)
2. A digestive canal supplementaries. (........................)

4. [A] Choose the correct answer :

1. Digestion of starch starts by the ....
   a. saliva. b. gastric juice. c. bile juice.
2. Gases exchange takes place in ....
   a. larynx. b. alveoli. c. small intestine.
3. It is found in the plant cell and not in the animal cell ....
   a. cytoplasm. b. nucleus. c. chloroplast.
4. The electric energy is produced by ....
   a. electric lamp. b. electric fan. c. dry cell.

[B] Classify the following living organisms into producers, consumers and decomposers :

(Corn plant - Human - Yoghurt bacteria - Lion)

Producers	Consumers	Decomposers
....	....	....
....	....	....

PART 3

Additional questions

[A] Complete :

1. .... is the closed path of the electric current.
2. The .... is the source of the electric current in the electric circuit.

[B] Choose the correct answer :

To make an electric circuit, we need ....

a. a key and a lamp. b. connecting wires.
c. a battery. d. all the previous answers.

24 Luxor Governorate — Luxor Educational Directorate

Answer the following questions :

1. [A] Choose the correct answer :

1. In the respiratory system, gases exchange process takes place in the ....
   a. nose. b. trachea. c. air sacs.
2. During photosynthesis process .... gas is evolved.
   a. carbon dioxide b. oxygen c. nitrogen
3. In dynamo, kinetic energy changes into .... energy.
   a. chemical b. heat c. electric
4. The .... is an example of unicellular living organisms.
   a. frog b. yeast fungus c. snake

[B] What happens when ... ?

1. A piece of fixed rubber band is pulled, then it is left.
   ....
   ....
2. There are no mucous and hairs in the nose.
   ....
   ....

تفوقك في أي عمل عليه العلامة دي ذاكرولي

2. [A] Write the scientific term :

1. A group of similar cells. (........................)
2. A part of the small intestine where the digested food is absorbed. (........................)
3. A form of energy that reaches the ear causing hearing. (........................)
4. Living organisms depend on themselves on making their food. (........................)

[B] Complete the missing parts :

The body ⟶ Systems ⟶ .... ⟶ Tissues ⟶ ....

3. [A] Complete the following sentences by using the suitable words :

(Diaphragm - iodine - three - 32)

1. Total number of teeth in adult is ....
2. .... muscle helps in the mechanism of respiration.
3. Salivary glands are .... pairs and secrete a liquid known as saliva.
4. We test the presence of starch in the plant leaves by using .... solution.

[B] What is the produced energy ... ?

1. Knocking on the door of the classroom. (........................)
2. Rubbing your hands together. (........................)

4. [A] Choose from column (B) what suits it column (A) :

(A)	(B)
1. Bile juice	a. it is the ability to do work.
2. Lungs	b. are found in the plant cell.
3. Energy	c. are organs in the human respiratory system.
4. Chloroplasts	d. is secreted by liver to digest fats.

1. .... 2. .... 3. .... 4. ....

[B] Give reasons for :

1. On moving a nail from a wooden rod, the nail becomes warm.

....

2. Nose has blood capillaries.

....

PART 3

Additional questions

[A] Choose the correct answer :

1. The closed path of the electric current is called ....
   a. electric current.
   b. battery.
   c. electric circuit.
   d. switch.
2. Refrigerators and computers work by ....
   a. static electricity.
   b. current electricity.
   c. both static and current electricity.
   d. no correct answer.

[B] Complete :

.... is used to close and open the electric circuit.

25 Aswan Governorate
Aswan Educational Directorate

Answer the following questions :

1. [A] Complete the following statement :

1. Energy it is the ability to do ....
2. .... , ... and .... are forms of energy.
3. Diaphragm moves .... during inhalation and moves .... during exhalation.
4. Green plants need .... gas in photosynthesis process.

[B] Write the scientific term :

1. The building unit of the living organisms body. (........................)
2. A process by which oxygen enters the lungs. (........................)

2. [A] Choose the correct answer :

1. Digested food is absorbed in the ....
   a. esophagus.
   b. small intestine.
   c. stomach.
2. The algae is from ....
   a. producers.
   b. consumers.
   c. decomposers.
3. .... is the energy produced from the electric fan.
   a. Kinetic energy
   b. Light energy
   c. Heat energy
4. On rubbing your hands together .... energy is produced.
   a. heat
   b. electric
   c. sound
5. The .... is an example of unicellular living organisms.
   a. frog
   b. snake
   c. yeast fungus

[B] Give reason for :

Nose has blood capillaries.

....

3. [A] Put (✓) or (✗) :

1. Alveoli are found in trachea. ( )
2. The iodine solution is used to detect the presence of starch. ( )
3. The animal cells are surrounded by the cell wall. ( )
4. Sound stops when the vibration of a tuning fork stops. ( )

[B] Correct the underlined words :

1. Gases exchange takes place in **trachea**. (....................)
2. The **nucleus** controls the substances that enter or leave the cell. (....................)

4. [A] Classify the following producers, consumers and decomposers :

(Green plant - Bread mold fungus - Lion - Human)

Producers	Consumers	Decomposers
....	....	....
....	....	....

[B] What is the name of used and produced energy from :

The device	Used energy	Produced energy
Electric lamp	....	....

Additional questions

[A] Put (✓) or (✗) :

1. The direct current is the electric current, that flows in a wire in two directions. ( )
2. To rationalize (decrease) the consumption of electricity, we must turn off the lamps when leaving a place. ( )

[B] Complete :

Refrigerator, television and computer are pieces of equipment, that are operated by ....

Final Exams 2018

PART TWO

30 Final Exams of some Schools Governorates.



* **Some exams questions have been modified according to the ministry modifications for the second term 2017-2018**

1 Cairo Governorate

Maadi Educational Zone
Sakkara Language School

Answer the following questions :

1 [A] Choose the correct answer :

1. Sound is a form of ....
   a. mass. b. energy. c. speed.
2. In both animal and plant cells, ... exist.
   a. cell membrane b. cytoplasm c. all the previous answers
3. .... is the source of the electric charges in the electric circuit.
   a. The electric wire b. Battery c. The electric lamp
4. .... are examples of producers.
   a. Green algae b. Fungi c. Birds
5. The energy produced by the piano is the ....
   a. potential energy. b. sound energy. c. kinetic energy.

[B] What is the importance of each of the following :

1. Liver : ....
2. Chloroplast : ....
3. Cell membrane : ....

2 Complete the following statements :

1. Electric fan changes .... energy into .... energy.
2. Starch digestion starts in ....
3. Sound is produced due to the .... of objects.
4. When iodine solution is added to starch, its colour turns into ....
5. .... surrounds the plant cell, while .... surrounds the animal cell.

3 [A] Write the scientific term :

1. Energy produced from dry cell (battery). (...............)
2. The process by which plants make their own food. (...............)
3. Living organisms which feed on dead bodies. (...............)
4. The cell which has chloroplast. (...............)
5. A tube in the respiratory system that is lined with cilia. (...............)

2 Part

[B] Give reasons for :

1. Lion and tiger are consumers.

....

2. Yeast fungus has an economic importance.

....

4 [A] Put (✓) or (✗) :

1. The human body consists of a group of systems. ( )
2. Lion, snake and hawk are examples for consumers. ( )
3. Energy stored in the spring of a toy is kinetic energy. ( )
4. The length of the digestive canal is about 10 - 15 metres. ( )
5. The respiratory system exists in the thoracic cavity. ( )

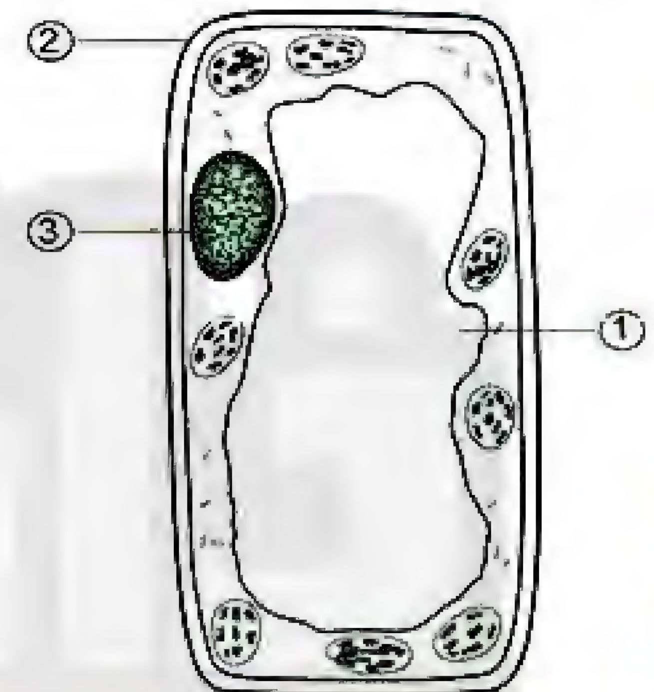
[B] 1. The figure represents ....

2. Label the figure :

① ....

② ....

③ ....



2 Cairo Governorate

New Cairo Zone
Manor House International School

Answer the following questions :

1 Complete the following statements :

1. Energy is the ability to do ....
2. The plant cell is characterized than the animal cell by the presence of .... and ....
3. The organ of the body of the living organism is formed of ....
4. In the electric lamp, the electric energy changes into .... energy.
5. The small intestine consists of two parts which are .... and ....

2 [A] Write the scientific term :

1. A unicellular organism used in making bread. (.....................)
2. The required gas for respiration process. (.....................)

3. The energy produced from the piano. (..................)
4. A battery, a lamp, an electric switch and connecting wires. (..................)
5. The energy used in solar cells and solar heater. (..................)

[B] Correct the underlined words :

1. Tissue is made up of a symmetric set of **organs**. (..................)
2. **Consumer** organisms can make their own food by photosynthesis process. (..................)
3. **Static electricity** is movable electric charges. (..................)

3 [A] Choose the correct answer :

1. Exhaled air contains .... gas and water vapour.
   a. oxygen b. carbon dioxide
   c. nitrogen d. all the previous answers
2. .... is a fluid in which all cell components are suspended.
   a. Cytoplasm b. Nucleus c. Green plastid d. Cell wall
3. .... is the building unit of the animal body.
   a. The plant cell b. The animal tissue
   c. The animal cell d. The animal organ
4. Radio produces .... energy.
   a. light b. sound c. potential d. heat
5. A hawk is an example of ....
   a. producers. b. decomposers.
   c. consumers. d. all the previous answers.

[B] Put (✓) in front of the right statement and (✗) in front of wrong one :

1. Decomposers can make their own food by themselves through the process of photosynthesis. ( )
2. On knocking on the door, the kinetic energy changes into light energy. ( )
3. Cell division is the function of nucleus in the cell. ( )

4 [A] What will happen if ... ?

1. Rubbing a plastic ruler by a piece of wool.
....
2. Plants aren't exposed to sunlight for few days.
....

2 Part

[B] Give reasons for :

1. The cell wall is very important structure for the plant cell.

....

2. The Sun is necessary for human's life.

....

3 Cairo Governorate — Al-Nasr Official Language School

Answer the following questions :

1 [A] Complete the following statements :

1. The cell wall is found in .... cell.
2. In the electric lamp, the electric energy changes into .... energy.
3. Digestion of different types of food is completed in ....
4. .... electricity is produced when electric charges flow through a wire.
5. During .... process, the diaphragm moves down.

[B] Circle the odd words :

1. Molars - Incisors - Canines - Ileum. (..................)
2. Frog - Yeast fungus - Dog - Human. (..................)
3. Green plants - Algae - Some bacteria - Cow. (..................)

2 [A] Put (✓) or (✗) :

1. Computer and radio work by static electricity. ( )
2. In solar cell, chemical energy changes into electric energy. ( )
3. Carbon dioxide gas is important for the plants to make photosynthesis process. ( )
4. Iodine solution turns into red colour in the presence of starch. ( )
5. The potential energy is stored in the spring of the toy car. ( )

[B] Give reasons for :

1. The green plants are called producers.

....

2. You feel warm when rubbing your hands together.

....

3. Limewater turns milky when blowing in it.

....

3 **[A] Choose the correct answer :**

1. The .... is the source of electricity in the electric circuit.
   a. wire b. battery c. lamp
2. .... changes fats into fatty emulsion.
   a. Bile juice b. Pancreatic juice c. Gastric juice
3. A group of similar cells form ....
   a. tissue. b. organ. c. system.
4. The human is considered .... organism.
   a. producer b. consumer c. decomposer
5. In the electric iron, the electric energy changes into .... energy.
   a. kinetic b. sound c. heat

[B] Write the scientific term :

1. The important gas for respiration. (...................)
2. The building unit of the living organisms. (...................)
3. Type of electricity is produced by rubbing. (...................)

4 **[A] Correct the underlined words :**

1. The **battery** opens and closes the electric circuit. (...................)
2. The air enters the lungs in **exhalation** process. (...................)
3. The plastids are found in **animal** cells. (...................)
4. The organ consists of a group of **systems**. (...................)
5. The vibration of the objects produces **light** energy. (...................)

[B] What is the important of ... ?

1. The decomposers.

   ....

2. Chloroplasts.

   ....

3. Incisors and canines.

   ....

2
Part

4 Cairo Governorate

Nasr City Educational Manage
Nasr City Language School

Answer the following questions :

1 Complete the following sentences :

1. .... and .... are produced from photosynthesis process.
2. .... is secreted by pancreas, while .... is secreted by liver.
3. .... and .... are forms of energy.
4. In inhalation the diaphragm moves .... and moves .... in exhalation.

2 [A] Put (✓) or (✗) :

1. The incomplete digestion of proteins occurs in esophagus. (   )
2. Nucleus controls the enter and out the substances from the cell. (   )
3. The green algae are consumers. (   )
4. Small intestine is a muscular tube that allows food to pass from pharynx to stomach. (   )
5. The plant cell is surrounded by the cell wall. (   )

[B] Mention the produced energy from :

1. Knocking on the door.
....
2. Passing the electricity in electric lamp.
....
3. The solar cell.
....

3 Write the scientific term :

1. The building unit of the body of living organisms. (..................)
2. It is the electric charges that flow through connecting wires for long distances forming the electric current. (..................)
3. A group of similar tissues. (..................)
4. The living organisms that decompose the remains of the dead bodies. (..................)

4 [A] Choose the correct answer :

1. Digestion of fats occurs in ....
a. mouth. b. duodenum. c. stomach. d. (a) and (b).

2. In dynamo the kinetic energy changes into .... energy.
 a. light b. chemical c. electric d. heat
3. There are two types of electricity are .... electricity.
 a. heat, static b. heat, kinetic
 c. electricity, static d. static, dynamic
4. .... is used in making bread.
 a. Bread mold fungus b. Yeast fungus c. Mashroom d. Ameba
5. The path of electric current is called ....
 a. battery. b. electric switch. c. electric circuit. d. lamp.

[B] Give reasons for :

1. Attraction of rubbed balloon to the wall.
....
2. You feel warm when you rub your hands together.
....

5 Cairo Governorate — Al-Orman Smart Language School

Answer the following questions :

1 Complete the following statements :

1. In photosynthesis process .... gas is used and .... gas is produced.
2. Plant cell is characterized than animal cell by presence of ....
3. Bile juice helps in digestion of .... into ....
4. Diaphragm moves .... during inhalation and moves .... during exhalation.
5. In radio .... energy is changed into .... energy.

2 [A] Put (✓) or (✗) in front of each of the following :

1. There are three pairs of salivary glands that secrete saliva. ( )
2. Limewater is used to detect the presence of oxygen gas. ( )
3. Sound is produced from the vibration of objects. ( )
4. Battery is the source of electric current in the electric circuit. ( )
5. Yeast fungus is unicellular organism. ( )
6. Gastric juice digests fats. ( )

2 Part

[B] Mention one function for the following :

1. The dynamo : ....
2. Yeast fungus : ....

3 [A] Write the scientific term for each of the following :

1. Electricity that formed from electric charges that remain on an object. (....................)
2. The building unit of the living organism's body. (....................)
3. The ability to do work. (....................)
4. Living organisms depending on producers to get their own food. (....................)
5. The organ in which the complete digestion of food occurs. (....................)

[B] Classify the following living organisms :

(Tiger - Green algae - Bread mold fungus).

Producer	Consumer	Decomposer
....	....	....

4 [A] Choose the correct answer :

1. When rubbing your hands together it generates .... energy.
   a. heat b. sound c. electric
2. The tissue is made up of a symmetric set of ....
   a. organs. b. cells. c. systems.
3. Solar heater changes .... energy into heat energy.
   a. chemical b. light c. electric
4. .... absorbs the water from the food remains.
   a. Rectum b. Anus c. Duodenum
5. The path of electric current is called ....
   a. battery. b. lamp. c. electric circuit.
6. We get .... energy from the solar cells.
   a. sound b. electric c. heat

[B] Give reasons for the following :

1. Molars make food swallowing easy.
....
2. Green plants are called producers.
....

6 Giza Governorate — Om El-Momeneen Language School

Answer the following questions :

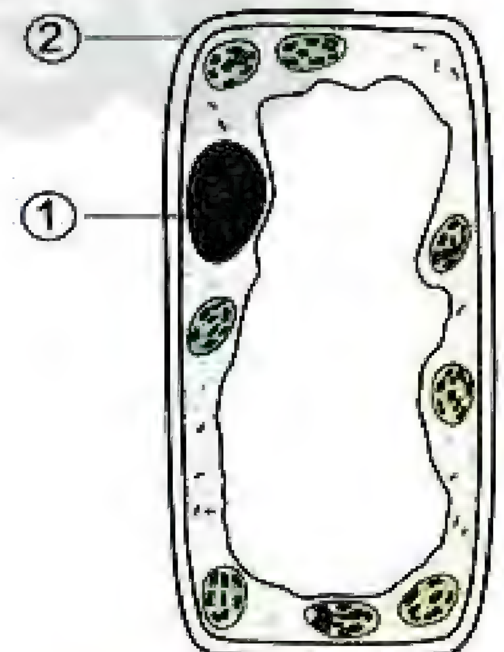
1 Complete the following sentences :

1. The exhaled air contains water vapour and .... gas.
2. Yeast fungus is used in making .... and alcohols.
3. In electric lamp .... energy changes into .... energy.
4. .... and .... are forms of energy.
5. Exchange of gases takes place in ....
6. Plant cell characterized than animal cell by having cell wall and ....

2 [A] Choose the correct answer :

1. Green plants use .... gas in photosynthesis process.
   a. carbon dioxide b. hydrogen c. nitrogen
2. Sound is a form of ....
   a. energy. b. mass. c. speed.
3. The energy produced from the heater is .... energy.
   a. mechanical b. heat c. magnetic
4. Lion is a ....
   a. producer. b. decomposer. c. consumer.
5. Digestion of starch starts by ....
   a. gastric juice. b. intestinal juice. c. saliva.

[B] Look at the following figure, then answer the following questions :



1. This figure represents .... cell.
2. Label the figuer :

① ....

② ....

3 [A] Put (✓) or (✗) :

1. Sound is produced due to vibration. ( )
2. Animal cell contains green plastids. ( )
3. Yeast fungus is a unicellular organism used in making bread and alcohol. ( )

4. Complete digestion of food occurs in small intestine, but incomplete digestion of proteins occurs in stomach. ( )
5. Tissue consists of a group of cells. ( )
6. Digestion food is absorbed in the stomach. ( )

[B] Give reasons for :

1. Plants are called producers.
....

2. Teeth are formed of incisors, canines and molars
....

4 [A] Write the scientific term of the following :

1. Living organisms that can make their own food. (..................)
2. The energy produced from the piano. (..................)
3. The ability to do work. (..................)
4. The juice that secreted by stomach. (..................)
5. The building unit of the living organisms. (..................)

[B] Classify the following living organisms into producers, consumers and decomposers :

(Plants - Bread mold fungus - Green algae - Cat - Lion - Bacteria).

Producers	Consumers	Decomposers
....	....	....
....	....	....

7 Giza Governorate — The Egyptian International School

Answer the following questions :

1 Complete the following questions :

1. The plant cell is characterized than the animal cell by the presence of .... and ....
2. .... is considered as one of the producers, but .... is considered as one of the decomposers.

3. .... is a form of energy that reaches ear causing hearing.
4. In the electric lamp, electric energy changes into .... energy.
5. Lightning in the sky is phenomenon related to the ....
6. .... gas is produced by the green plants during the photosynthesis process.

2 [A] Correct the underlined words :

1. The group of similar cells forms **system**. (...................)
2. **Dynamo** electricity produced due to rubbing. (...................)
3. **Large intestine** secretes the intestinal juice. (...................)
4. **Cytoplasm** characterizes the plant cell than the animal cell. (...................)
5. The iodine solution is used to detect the presence of **sugar**. (...................)
6. **Light** is produced from vibration of objects. (...................)

[B] What is meant by ... ?

1. The plant cell.

....

2. Digestive enzymes :

....

3 [A] Choose the correct answer :

1. The plasma membrane surrounds the .... directly.
   a. cytoplasm b. cell wall c. nucleus d. green plastids
2. The energy produced by a piano is the ....
   a. potential energy. b. sound energy.
   c. electric energy. d. chemical energy.
3. The biological operations occur in ....
   a. cytoplasm. b. nucleus.
   c. cell membrane. d. chloroplast.
4. Solar heater changes solar energy into .... energy.
   a. heat b. light c. chemical d. electric
5. Plants use .... in the photosynthesis process.
   a. oxygen gas b. nitrogen gas
   c. carbon dioxide gas d. water vapour
6. The source of electric current called ....
   a. electric switch. b. wire. c. battery. d. lamp.

2 Part

[B] What happens when ... ?

1. Remove the battery from the electric circuit.
....
2. The Sun rays fall on a convergent lens that put it over a paper.
....

4 [A] Write the scientific term :

1. It is a fluid that fills the cell and all the cell components are suspended in it. (..................)
2. Living organisms that get their food through decomposing organic wastes as dead bodies, plant remains and decayed food. (..................)
3. The energy produced from the dry cell. (..................)
4. The organs consist of tiny air sacs and they exist in the thoracic cavity. (..................)

[B] Give reasons for :

1. Plant cell contains chloroplasts (green plastids).
....
2. You hear a sound when you tap a tuning fork.
....
3. Nose has blood capillaries.
....

[C] Classify the following :

(Human - Corn plant - Yoghurt bacteria - Cat - Yeast fungus - Green algae).

Producers	Consumers	Decomposers
....	....	....
....	....	....

8 Giza Governorate — South Giza Educational Directorate

Answer the following questions :

1 Complete the following statements :

1. Plant cell is characterized by presence of .... and ....
2. Sound originates from .... of objects.
3. Photosynthesis process produces .... and ....
4. We used yeast fungus for making .... and ....
5. During respiration, gases exchange occurs in ....

2 **[A] Choose the correct answer :**

1. The number of respiration times increases in .... case.
   a. standing b. sleeping c. running
2. The electric energy is produced from ....
   a. piano. b. battery. c. heater.
3. By rubbing hands .... energy is produced.
   a. heat b. sound c. electric
4. .... is called the voice box.
   a. Larynx b. Pharynx c. Trachea

[B] Put (✓) or (✗) :

1. Exhaled air contains oxygen gas. (   )
2. Green plant needs carbon dioxide gas for photosynthesis. (   )
3. The electric lamps produce light energy. (   )
4. Digestion of starch and converting it into sugar take place by the effect of digestive enzymes in saliva. (   )

3 **[A] Give reasons for :**

1. Plant cell has green plastides.
   ....
2. Animal cell has no definite shape.
   ....

[B] Write the scientific term :

1. It is ability to do work. (..................)
2. The organ that secretes bile juice. (..................)
3. A device that changes electric energy into sound energy. (..................)
4. It contains cartilaginous rings. (..................)

4 **Classify the following :**

(Green plant - Rabbit - Cat - Dog - Bacteria - Fungi - Green algae - Bean plant).

Producers	Consumers	Decomposers
....	....	....
....	....	....
....	....	....

2 Part

9 Alexandria Governorate — Taymour English School

Answer the following questions :

1 [A] Complete the following statements:

1. .... is a sac-like muscular organ.
2. Rubbing your hands together produces .... energy.
3. .... and .... are unicellular organisms.
4. In the electric circuit, ... is the source of electric current.
5. At top of trachea, there is .... that called the voice box.

[B] What are the conditions needed for plants to make photosynthesis ?

1. ....
2. ....
3. ....

2 [A] Give reasons for :

1. The plant cell has a definite shape.

....

2. The stomach cannot digest food completely.

....

....

[B] Put (✓) or (✗) :

1. Kinetic energy that is stored in the body. ( )
2. Green plants are decomposers. ( )
3. Saliva digests proteins. ( )
4. The system of human body consists of a group of organs. ( )
5. Nose and pharynx are organs of the respiratory system. ( )

3 [A] Write the scientific term :

1. It is the smallest building unit of the living organism. (..................)
2. An equipment used to change electric energy into kinetic energy. (..................)
3. Type of electricity generated by rubbing objects. (..................)
4. Living organisms that depend on other living organisms in feeding. (..................)
5. A group of cells. (..................)

[B] Mention one use for :

1. Decomposers.

....

2. Solar cells.

....

4 **[A] Compare between plant and animal cells according to :**

Points of comparison	Animal cell	Plant cell
1. Chloroplasts :	....	....
2. Nucleus :	....	....

[B] Mention the type of produced energy in the following :

1. Vibrating tuning fork.
   ....
2. Electric lamp.
   ....
3. Washing machine.
   ....

10 Alexandria Governorate — West Educational Directorate

Answer the following questions :

1 **Complete the following statements :**

1. Photosynthesis process produces .... and ....
2. Energy is the ability to do ....
3. Green plastids are found in .... cell and not found in .... cell.
4. In solar cells, the energy produced is .... energy, while in solar heater, the energy produced is .... energy.
5. .... system digests and absorbs food.

2 **[A] Put (✓) in front of the correct statement and (✗) in front of the wrong one :**

1. The plant grows in the presence of sunlight. ( )
2. Bile juice helps in the digestion of fats. ( )
3. Bread mold fungus and some types of bacteria are examples of consumers. ( )
4. The electric energy changes into light energy in the electric lamp. ( )
5. Alveoli are found in trachea. ( )

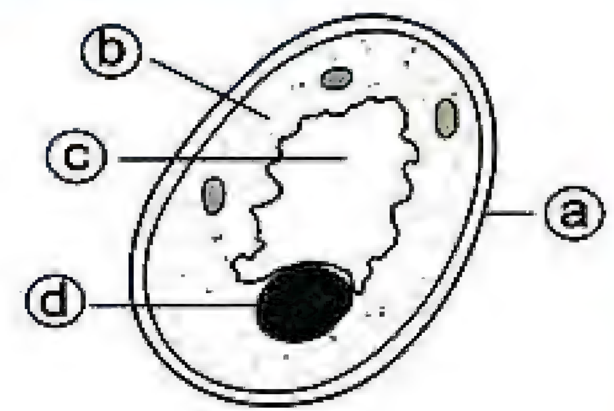
[B] Write the scientific term :

1. The type of energy that is a clean form of energy. (..................)
2. A device that is used to close and open the electric circuit. (..................)
3. Group of organs working together. (..................)
4. A form of energy that is produced from the vibration of objects. (..................)
5. Two narrow tubes found at the bottom of the trachea. (..................)

2 Part

3 **The figure is example of unicellular organism, answer the questions.**

1. The name of the organism is ....
2. Label the figure :
   - ⓐ ....
   - ⓑ ....
   - ⓒ ....
   - ⓓ ....



3. The unicellular organism is used in making :
   1. ....
   2. ....

4 **[A] Choose the correct answer :**

1. The kinetic energy changes into sound energy in ....
   a. knocking on the door. b. violin. c. (a) and (b).
2. Photosynthesis process takes place in the .... of the plant.
   a. seeds b. green parts c. roots
3. Types of electricity are ....
   a. the static electricity only. b. the dynamic electricity only.
   c. (a) and (b).
4. Cutting and tearing food into small pieces are the functions of ....
   a. molars. b. incisors and canines.
   c. salivary glands.
5. .... are examples of producers.
   a. Birds b. Fungi c. Green algae
6. .... gas changes limewater into milky.
   a. Oxygen b. Nitrogen c. Carbon dioxide

[B] Give reasons for :

1. You must not eat fast meals.
....
2. Consumer and decomposer cannot make photosynthesis process.
....

11 Alexandria Governorate — East Educational Zone

Answer the following questions :

1 Complete the following sentences :

1. Pharynx is a common cavity leads to .... and ....
2. Each tissue is formed of identical units of ....
3. Digestion of proteins begins in .... and digestion of starch begins in ....
4. .... is the source of electric current in the electric circuit.
5. In solar cells, ... energy changes into .... energy.

2 [A] Write the scientific term :

1. Living organisms depending on another living organisms in their food. (..................)
2. A part of the small intestine, where the digested food is absorbed. (..................)
3. The teeth that cut and tear food. (..................)
4. Tiny air sacs found in the two lungs. (..................)
5. The type of electricity which can be formed by rubbing. (..................)
6. A muscular membrane that separates the thoracic cavity from the abdominal cavity. (..................)

[B] Give reasons for :

1. Yeast fungus has an economic importance.
....
2. It is preferred to breathe through the nose not through the mouth.
....
....

3 [A] Put (✓) or (✗) in front of each sentences and correct the wrong one :

1. Absorption process takes place in the stomach. (   )
....
2. The animal cell is surrounded by cell wall. (   )
....
3. Salivary glands, liver and pancreas are connected to the digestive canal. (   )
....

2 Part

4. Human feeds on producers and consumers. ( )

....

5. Sound is produced from the vibration of objects. ( )

....

6. Mouth, esophagus, pharynx and liver are from the organs of the digestive canal. ( )

....

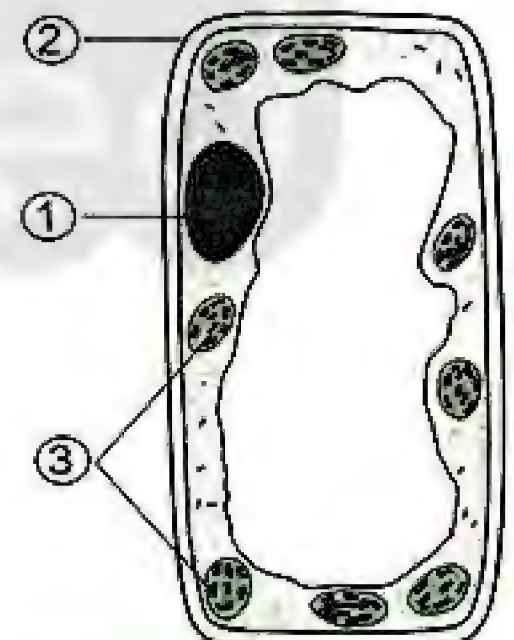
[B] What is the importance of each of the following :

1. Liver : ....
2. Chloroplast : ....
3. Cell membrane : ....

4 [A] Choose the correct answer :

1. Exhalation air contains .... gas and water vapour.
   a. oxygen b. carbon dioxide c. nitrogen
2. The function of the nervous system is ....
   a. digestion. b. respiration. c. sensation.
3. Digested food is absorbed in the ....
   a. esophagus. b. small intestine. c. large intestine.
4. The .... controls the substances that enter or leave the cell.
   a. cytoplasm b. plasma membrane c. nucleus

[B] Look at the opposite figure, then answer :



1. Label the figure :
   ① ....
   ② ....
   ③ ....
2. What is the function of number 3 ?
   ....

12 Qalyoubia Governorate Official Schools Directorate

Answer the following questions :

1 [A] Choose the correct answer :

1. The number of respiration times increases in .... case.
   a. sitting b. running c. sleeping d. standing

2. During respiration process, gases exchange occurs in ....
   a. trachea. b. nose. c. mouth. d. alveoli.
3. All the following can be found in yeast fungus except ....
   a. cytoplasm. b. nucleus. c. chloroplasts. d. cell wall.
4. During photosynthesis process, ... gas is evolved.
   a. carbon dioxide b. nitrogen c. oxygen d. chlorine
5. Radio produces .... energy.
   a. light b. sound c. potential d. heat
6. .... is a cavity in which teeth and tongue are existed and salivary glands are opened.
   a. Pharynx b. Mouth c. Esophagus d. Stomach

[B] Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Cell	a. is used in making bread.
2. Plasma membrane	b. controls the substances that enter or leave the cell.
3. Cytoplasm	c. is a fluid in which all the biological operations occur.
4. Yeast fungus	d. is the unit of structure in living organisms.

1. .... 2. .... 3. .... 4. ....

2 [A] Complete the following :

1. .... energy changes into .... energy by dynamo.
2. .... and .... are examples of decomposers.
3. The plant cell is surrounded by .... , while the animal cell is surrounded by ....
4. The respiration process includes .... and .... process.
5. .... and .... are examples of producers organisms.
6. Absorption of digested food occurs in .... , then it is moved to ....

[B] Give reasons for :

1. Food must be digested into simple substances.

....

2. Alveoli and blood capillaries have thin wall.

....

3 [A] Write the scientific term :

1. It is the ability to do work. (..................)

2. The unit of structure and function in the living organism's body. (..................)
3. The source of energy for plants to make their food. (..................)
4. Living organisms depend on other living organisms in their food. (..................)
5. The energy stored in the spring of a toy car. (..................)
6. The device that changes solar energy into heat energy. (..................)

[B] Mention one function of :

1. Iodine solution.

....

2. Battery in the electric circuit.

....

4 [A] Put (✓) or (✗) in front of each sentences :

1. Undigested food is stored in the large intestine. (   )
2. Sound is produced from the vibration of objects. (   )
3. Oxygen gas is essential for the occurrence photosynthesis. (   )
4. Consumers are living organisms that make their own food by photosynthesis process. (   )
5. The only type of electricity is the static electricity. (   )
6. To keep the respiratory system healthy we should eat fruits rich in vitamin (C). (   )

[B] Classify the following into producers, consumers and decomposers :

(Lion – Green plant – Human – Bread mold fungus).

- Producers : ....
- Consumers : ....
- Decomposers : ....

13 El-Sharkia Governorate — Science Inspectorate

Answer the following questions :

1 Complete the following statements :

1. Yeast fungus is used in making bread and ....
2. .... and .... are examples of the digestive juices in the human body.
3. Exhaled air contains .... gas and water vapour.
4. Green plants and .... are considered from producers.

5. Proteins are digested in .... and ....
6. The plant cell is characterized than the animal cell by the presence of .... and ....

2 Write the scientific term :

1. The smallest building unit of the living organism's body. (..................)
2. Type of electricity which formed by rubbing. (..................)
3. Living organisms that can make their own food. (..................)
4. A process which the air rich in oxygen gas enters the lungs. (..................)
5. The ability to do work. (..................)
6. Closed path of the electric current. (..................)
7. The sac-like muscular organ that secretes gastric juice. (..................)
8. The organ that is responsible for incomplete digestion of protein. (..................)

3 [A] Choose the correct answer :

1. Bread mold fungus is a ....
   a. producer. b. consumer. c. decomposer.
2. Plants produce .... gas in the photosynthesis process.
   a. oxygen b. carbon dioxide c. nitrogen
3. We can test the presence of starch in the plant leaves by using ....
   a. limewater. b. iodine solution. c. alcohol.
4. The following organs belong to the digestive canal except ....
   a. stomach. b. esophagus. c. liver.

[B] What happens if ... ?

Salivary glands stop secreting saliva.

....

[C] Give reasons for :

Consumers cannot make their own food.

....

4 Put (✓) or (✗) in front of each sentences :

1. The diaphragm muscle contracts and moves down during inhalation. ( )
2. Bacteria and yeast fungus are unicellular organisms. ( )
3. Nucleus controls the substances that enter or leave the cell. ( )

2 Part

4. Smoking keeps respiratory system healthy. ( )
5. The number of respiration times increases in sleeping case. ( )
6. On rubbing your hands together electric energy is produced. ( )
7. Digestion of protein occurs by the effect of gastric juice, while the digestion of fats occurs by the effect of bile juice. ( )
8. Solar cells change solar energy into electric energy. ( )

14 Menofia Governorate — Shebeen El-Koum Educational Directorate

Answer the following questions :

1 Complete the following statements :

1. Tissue is made up of a symmetric set of ....
2. .... gas is produced during the photosynthesis process.
3. In battery, ... energy is changed into .... energy.
4. Sound is a form of ...., that reaches ear causing ....
5. The plant cell is characterized than the animal cell by the presence of .... and ....

2 [A] Write the scientific term :

1. The ability to do work. (..................)
2. The building unit of the living organism's body. (..................)
3. The energy stored in a spring of a toy car. (..................)
4. A gas that is very important to photosynthesis process. (..................)
5. Electric charges that flow through connecting wires. (..................)
6. A fluid that fills the cell and biological operations are acted in it. (..................)

[B] What happens when ... ?

1. You blow in a test tube containing clear limewater.

....

2. You rub a plastic ruler by hair, then close it to small pieces of paper.

....

3 [A] Choose the correct answer :

1. Exhaled air contains .... gas and water vapour.
   a. oxygen b. carbon dioxide c. nitrogen

2. .... changes light energy into electric energy directly.
   a. Solar cell   b. Solar heater   c. Gas heater
3. The undigested food goes to the ....
   a. stomach.   b. small intestine.   c. large intestine.
4. All the following can be found in yeast fungus except ....
   a. cytoplasm   b. nucleus   c. chloroplast.
5. In the digestive system, the stomach is followed by ....
   a. esophagus.   b. duodenum.   c. ileum.

[B] Give reasons for :

1. On rubbing your hands together, you feel with heat.
   ....
2. Yeast fungus has a definite shape.
   ....

4 [A] Put (✓) or (✗) in front of each sentences :

1. The green plants can live without sunlight. ( )
2. The air enters the lungs through exhalation process. ( )
3. Avoid being in crowded places keep your respiratory system healthy. ( )
4. Gastric juice digests fats. ( )
5. Digested food is absorbed in the stomach. ( )

[B] Classify the following living organisms into producers, consumers and decomposers :

(Tiger - Bread mold fungus – Wild cat – Green plant – Yoghurt bacteria – Green algae).

Producers	Consumers	Decomposers
....	....	....
....	....	....

15 El - Gharbeya Governorate — Central Science Supervision

Answer the following questions :

1 [A] Complete the following statements :

1. Air enters into the lungs during the process of .... and leaves them during the process of ....

2 Part

2. Plant cells are characterized than animal cells by the presence of ...., and ....
3. To check the existence of starch in the plant leaves by using .... solution, its colour turns into ....
4. In the battery, ... energy changes into .... energy.
5. Solar heater changes .... energy into .... energy.
6. The connecting wires in the electric circuit are used to transfer .... from .... to lamp.

[B] Give reasons for each of the following :

1. Green plants are called producers.
....
2. Liver helps in the digestion of fats.
....

2 [A] Choose the correct answer :

1. During the respiration process, gases exchange occurs in ....
a. trachea. b. nose. c. mouth. d. alveoli.
2. The stomach is ....
a. a system. b. an organ. c. a cell. d. a tissue.
3. During photosynthesis process .... gas is released.
a. carbon dioxide b. nitrogen c. oxygen d. chlorine
4. The vibration of objects produces .... energy.
a. light b. heat c. sound d. electric
5. Bile juice is secreted by ....
a. liver. b. salivary glands. c. pancreas. d. stomach.
6. Lightning that occurs in the sky is a phenomenon related to ....
a. static electricity. b. dynamic electricity.
c. potential energy. d. kinetic energy.

[B] What is the important or used of each of the following :

1. Yeast fungus : ....
....
2. Solar cells : ....
....

3 **[A] Write the scientific term for each of the following :**

1. The process carried out by human in order to get energy from burning of digested food. (..................)
2. The building unit of the living organism's body. (..................)
3. Living organisms depend on other living organisms in their food. (..................)
4. The ability to do work. (..................)
5. The source of electric current in the electric circuit. (..................)
6. The muscular tube allows food to pass from pharynx to stomach. (..................)

[B] What happens when ... ?

1. Green plants are not exposed to sunlight for few days.
....
2. The Sun rays fall on a convergent lens that is put over a piece of paper.
....
....

4 **[A] Correct the underlined words :**

1. The turbidity of limewater is an evidence for the presence of **oxygen** gas. (..................)
2. **The nucleus** controls the substances entering into the cell or leaving it. (..................)
3. Green algae are considered from **decomposers**. (..................)
4. Tissue is made up of a symmetric set of **organs**. (..................)
5. Large intestine ends with **ileum**. (..................)
6. **Static** electricity is movable electric charges. (..................)

[B] Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Cytoplasm	a. are examples of decomposers.
2. Diaphragm	b. used to open and close electric circuit.
3. Fungi	c. is a fluid in which, all the biological operations occur.
4. Electric switch	d. has an important role in the respiration process.

1. .... 2. .... 3. .... 4. ....

2
Part

16 Dakahlia Governorate — Educational Directorate

Answer the following questions :

1 [A] Choose the correct answer :

1. The algae are from ....
   a. consumers. b. producers.
   c. decomposers. d. all the previous answers.
2. We can detect the presence of starch in the green plant leaves by using ....
   a. water. b. limewater. c. alcohol. d. iodine.
3. Digestion of proteins starts in ....
   a. mouth. b. esophagus. c. small intestine. d. stomach.
4. The spring of a toy stores .... energy.
   a. heat b. sound c. potential d. electric

[B] Give reasons for each of the following :

1. The exhaled air turns clear limewater into turbid.
   ....
2. Importance of battery in the electric circuit.
   ....
3. Decomposers have a great economical and environmental importance.
   ....
   ....
4. Human is a consumer.
   ....

2 [A] Complete the following statements :

1. Plant cells are characterized than animal cells by the presence of .... and ....
2. Diaphragm moves .... during inhalation and moves .... during exhalation.
3. A group of organs forms .... , while a group of cells forms ....
4. Photosynthesis process produces .... and ....

[B] Write the scientific term :

1. They are digestive substances that digest food and convert it into simple substances. (...............)

2. Electric charges that remain on an object. (..................)
3. It surrounds the cell and controls the substances entering into the cell or leaving it. (..................)
4. The ability to do work. (..................)

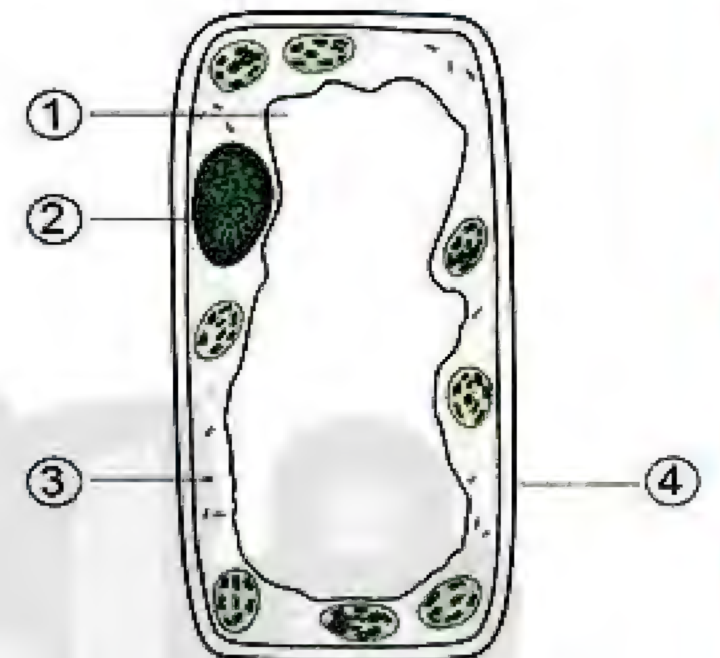
3 **[A] Put (✓) or (✗) in front of each of the following sentences :**

1. We get light energy from electric lamp. ( )
2. In radio, electric energy is changed into chemical energy. ( )
3. Producers can make their own food by themselves. ( )

[B] Look at the opposite figure, then answer :

1. The opposite diagram that shows the .... cell.
2. Label the diagram :

① ....
② ....
③ ....
④ ....



4 **[A] Complete the following table :**

Tools	Energy used	Energy produced
1. Solar heater.	....	....
2. Battery.	....	....
3. Electric motor.	....	....

[B] Mention the function of each of the following :

1. Yeast fungus : ....
2. Nucleus : ....
....
3. Cell wall for plant cell : ....

[C] How can you keep respiratory system healthy ? **(2 points only)**

1. ....
2. ....

2 Part

17 Ismailia Governorate

Directorate Of Education
Science Inspectorate

Answer the following questions :

1 [A] Complete the following :

1. .... are digestive substances that digest food and convert it into simple substances.
2. Yeast fungus is used in making .... and ....
3. The two types of electricity are .... and ....
4. Green plant is considered a .... but cow is considered a ....

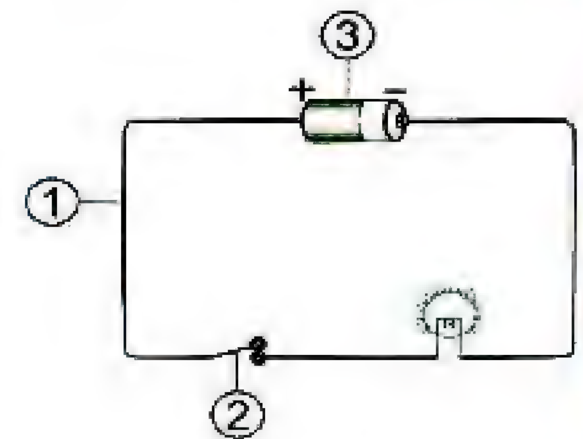
[B] Determine the kind of energy that produced from the following :

Equipment	Energy produced
1. Electric fan.	....
2. Dynamo.	....
3. Violin.	....
4. Electric heater.	....

2 [A] Write the scientific term :

1. A group of similar cells. (..................)
2. The organ starts from the end of the small intestine and ends with the anus. (..................)
3. A process by which oxygen gas enters the lungs. (..................)
4. The gas produced from photosynthesis process. (..................)

[B] The opposite figure represents an electric circuit :



a) Label the figure :
① ....
② ....
③ ....

b) What the importance of part ③ ?

....

3 [A] Choose the correct answer :

1. .... are examples of decomposers.
   a. Algae b. Reptiles c. Fungi d. Birds

2. We use .... to detect the presence of starch in green leaves.
   a. water b. alcohol c. gas d. iodine
3. .... is the ability to do work.
   a. Energy b. Force c. Motion d. Motor
4. Plants need .... to make photosynthesis process.
   a. sunlight b. carbon dioxide c. water d. (a), (b) and (c)
5. .... is produced due to the vibration of objects.
   a. Speed b. Sound c. Plant d. Alveoli

[B] Give reason for :

1. Decomposers and consumers cannot make their own food.

....

2. Proteins are digested in stomach and small intestine.

....

....

4 [A] Correct the underlined words :

1. The energy stored in the spring is **the kinetic** energy. (...................)
2. **Gastric juice** helps in digestion of fats. (...................)
3. **Liver** is a muscle that helps in respiration process. (...................)
4. Chloroplasts are found in **consumers**. (...................)

[B] Match :

(A)	(B)
1. The plant cell	a. responsible for cell division.
2. The nucleus	b. has no cell wall.
3. The animal cell	c. fill the space of the cell.
4. Cytoplasm	d. has a cell wall

1. .... 2. .... 3. .... 4. ....

2 Part

18 **Suez Governorate** Directorate Of Education

Answer the following questions :

1 [A] Complete the following statements by using the following words :

(Oxygen – duodenum – light – iodine solution – energy – work – decomposers).

1. Bread mold fungus is from ....
2. .... gas is produced by green plants during the process of photosynthesis.
3. To check the existence of starch in the plant leaf by using ....
4. Energy is ability to do ....
5. In electric lamp, electric energy changes into .... energy.
6. Fats digestion starts in ....
7. Sound is a form of ....

[B] What happens if ... ?

When rubbing your hands together.

....

2 [A] Choose the correct answer :

1. Which of the following can be existed in a plant cell and can't be existed in an animal cell ....
   a. nucleus. b. chloroplast.
   c. cytoplasm. d. plasma membrane.
2. The .... is an example of unicellular living organisms.
   a. frog b. snake c. yeast fungus d. bean plant
3. A hawk is an example of ....
   a. producers. b. consumers.
   c. decomposers. d. all the previous answers.
4. Kinetic energy is changed into .... energy in dynamo.
   a. chemical b. heat c. electric d. sound

[B] Write the scientific term for each of the following statements :

1. The building unit in a living organism. (.....................)
2. The living organisms that can make their own food by themselves through the process of photosynthesis. (.....................)
3. The organ that mixes food with saliva. (.....................)
4. A process by which oxygen gas enters the lungs. (.....................)

3 **[A] Put (✓) or (✗) in front of each of the following sentences :**

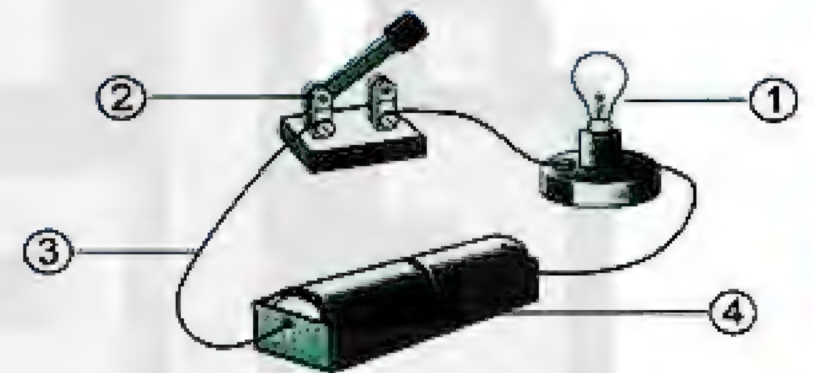
1. The digestive system consists of a group of organs. ( )
2. Small bits of paper are attracted to a rubbed plastic ruler. ( )
3. The animal cells are surrounded by cell wall. ( )
4. Animals are producers. ( )
5. The limewater is used to detect the presence of carbon dioxide gas. ( )

[B] Give reasons for :

1. Absorption of food does not take place in stomach.
....
2. Decomposers have a great economical and environmental importance.
....
....

4 **[A] Label the opposite diagram :**

① ....
② ....
③ ....
④ ....



[B] Correct the underlined words :

1. The <u>**nucleus**</u> controls the substances that enter or leave the cell. (..................)
2. <u>**Consumers**</u> are living organisms that get their food through decomposing the organic wastes. (..................)
3. <u>**Light**</u> is produced from the vibration of objects. (..................)
4. Tissue is made up of a symmetric set of <u>**organs**</u>. (..................)

19 Damietta Governorate — Science Inspectorate

Answer the following questions :

1 **[A] Complete the following statements :**

1. The stomach secretes .... juice which digests .... substances.
2. Algae are examples of ...., while bread mold fungus is an example of ....

2 Part

3. Proteins digestion starts in ....
4. Plant cell is characterized than animal cell by the presence of .... and ....
5. In battery, ... energy changes into .... energy.

[B] Give reasons for :

1. Salivary glands secrete saliva inside the mouth.

....

2. Decomposers can't make their own food by themselves.

....

2 [A] Write the scientific term for each of the following :

1. The process by which the green plant makes its own food. (..................)
2. A group of tissues that work together. (..................)
3. It changes light energy into electric energy directly. (..................)
4. It is the ability to do work. (..................)
5. The type of electricity that can be formed by rubbing. (..................)

[B] Mention the type of energy used in the following :

1. When you switch on the electric motor. (..................)
2. When you rub your hands together. (..................)
3. When it reaches ear causing hearing. (..................)

3 [A] Correct the underlined words :

1. Green plants are considered from **consumers**. (..................)
2. Absorption of food occurs in **stomach**. (..................)
3. **Cell wall** organizes the biological operations inside the cell. (..................)
4. **The system** is the building unit of the living organism's body. (..................)
5. The spring of a toy car stores **heat energy**. (..................)
6. A complete digestion of protein substances occurs in **stomach**. (..................)

[B] Mention one importance of the following :

1. Plasma membrane : ....
2. Saliva : ....

4 [A] Choose the correct answer :

1. The path of electric current is called ....
   a. battery. b. electric switch. c. electric circuit. d. lamp.

2. The exhaled air contains .... as products of respiration process.
 a. carbon dioxide gas b. oxygen gas
 c. water vapour d. (a) and (c)
3. Kinetic energy is changed into .... energy in dynamo.
 a. chemical b. electric c. heat d. sound
4. Yeast fungus is used in making ....
 a. bread. b. alcohol. c. oil. d. (a) and (b).
5. Cow is an example of .... that feed on producers.
 a. producers b. consumers
 c. decomposers d. all the previous answers

[B] What will happen when ... ?

1. Remove the battery from a closed electric circuit.

....

2. Tuning fork vibrates.

....

3. The diaphragm muscle contracts and moves down during inhalation.

....

20 Kafr El-Sheikh Governorate — Educational Directorate

Answer the following questions :

1 [A] Choose the correct answer :

1. The energy which is produced from the heater is .... energy.
 a. sound b. electric c. heat
2. Oxygen is released during the process of ....
 a. burning. b. photosynthesis. c. warming.
3. Passing of electric current in the motor of electric fan causes ....
 a. lighting. b. heating. c. rotation.
4. .... are from the consumers.
 a. Cows b. Trees c. Algae
5. Inside the lung, bronchioles end in ....
 a. blood capillaries. b. alveoli. c. cilia

2 Part

[B] Write the suitable tool or device that is used in the following processes by choosing the correct word :

(Spring – Battery – Convergent lens – Dynamo).

1. Changing the kinetic energy into electric energy. (..................)
2. Storing the energy in a toy. (..................)
3. Pushes electric charges in wires. (..................)
4. Collects the Sun rays causing burning of a paper. (..................)

2 [A] Correct the underlined words in these statements by choosing the correct word from the following :

(Sound – Energy – The plant cell – Bacteria).

1. **The animal cell** is the building unit of the plants. (..................)
2. **Heat** is produced due to vibration of objects. (..................)
3. **Chickens** are from the decomposers. (..................)
4. **Motion** is the ability to work. (..................)

[B] Give reasons for each of the following by choosing the correct word :

1. Vision of lightning in the sky.
   Because of forming of ***(electric charges / electric current)*** in the sky.
2. Electric energy is provided to artificial satellites in the space.
   Because ***(solar cells / dynamos)*** supply them with electricity.

3 [A] What could be happened in the following cases ? Put (✓) in front of the suitable statement :

1. There is no the Sun.
   a) Plants will remain green.
   b) Plants will not grow.
2. Solar heaters are not under the Sun rays and put inside our houses.
   a) They will make the water very hot.
   b) The water will remain cool.

[B] Put (✓) in front of the right sentence and (✗) in front of the wrong sentence :

1. All the living organisms have common proterties as sensation, reproduction, motion, respiration and nutrition. (   )
2. Light reaches ear causing hearing. (   )
3. Bread mold fungus is an example of decomposers. (   )
4. Gastric juice digests fats. (   )
5. Cilia in trachea eject up strange objects. (   )

4 **[A] Choose from column (B) what suits it in column (A) :**

(A)	(B)
1. Sound energy is produced	a. for plants.
2. Pancreatic juice	b. is secreted by liver.
3. The Sun is the source of energy	c. from the piano.
4. Bile juice	d. is secreted by pancreas.

1. .... 2. .... 3. .... 4. ....

[B] Give reasons for :

1. Starch is not digested in stomach.
....
....

2. You cannot live without small intestine.
....
....

21 EL-Behira Governorate — Science Supervision

Answer the following questions :

1 **Complete the following sentences :**

1. During the respiration process, gases exchange occurs in ....
2. Solar cell changes sunlight into .... energy.
3. Yeast fungus is used in making .... and ....
4. Sound originates from ....
5. .... feeds on organic remains such as; dead bodies of plants and animals and food remains.
6. Plant cell is characterized than animal cell by the presence of .... and ....

2 **[A] Write the scientific term :**

1. A group of organs working together. (.....................)
2. The building unit of the plant body. (.....................)
3. A biological process takes place in the green parts (leaves) of plant to make its own food. (.....................)

2 Part

4. The ability to do work. (....................)
5. A type of electricity that is formed from electric charges that remain on an object. (....................)
6. The type of glands that exists in 3 pairs and secrete saliva. (....................)

[B] Give reasons for :

1. We should eat fruits rich in vitamin (C).

....

2. You feel warm when you rub your hands together.

....

3 [A] Choose the correct answer :

1. .... is a cavity, that extends from the pharynx to esophagus.
   a. Stomach b. Esophagus c. Mouth d. Small intestine
2. Exhaled air contains all the following except .... gas.
   a. water vapour b. carbon dioxide
   c. Oxygen d. (a) and (b)
3. .... allows food to pass from pharynx to stomach.
   a. Mouth b. Esophagus
   c. Small intestine d. Large intestine
4. .... is the electric charges that flow through connecting wires for long distances.
   a. Current electricity b. Static electricity
   c. Dynamic electricity d. (a) or (c)
5. To make an electric circuit, we need ....
   a. a key and a lamp. b. connecting wires.
   c. a battery. d. all the previous answers.

[B] Fill in the following table :

P.O.C	Inhalation process	Exhalation process
1. Definition :	....	....
2. Diaphragm muscle :	....	....
3. Movement of the ribs :	....	....

4 **[A] Mention one function or (used) only for :**

1. Dynamo.
....
2. Nucleus.
....

[B] Classify the following living organisms :

(Yeast fungus – Grass – Cow – Human – Rice plant – Bacteria).

Producers	Consumers	Decomposers
....	....	....
....	....	....

22 Fayoum Governorate — Science Supervision for Governmental Language School

Answer the following questions :

1 **Complete the following statements :**

1. Air enters into the lungs during the process of .... and leaves them during the process of ....
2. .... gas is evolved during the process of photosynthesis, while .... gas is released as a product of a respiration process.
3. In electric lamp, electric energy changes into .... energy.
4. In the motor of a car, electric energy changes into .... energy.
5. The current electricity is .... of electric charges.
6. Rubbing of objects generates .... electricity.

2 **[A] Correct the underlined words :**

1. Exchange of gases occurs between the air existed in alveoli and the **water** in blood capillaries. (....................)
2. Digestive canal supplementaries include salivary glands, liver and **mouth**. (....................)
3. There are chloroplasts in the cells of the **decomposers**. (....................)
4. To check the existence of starch in the plant leaf by using **limewater** solution. (....................)

2 Part

[B] Classify the following living organisms into producers, consumers and decomposers :

(Dog – Lion – Corn plant – Green algae – Yeast fungus – Human – Yoghurt bacteria – Tree).

Producers	Consumers	Decomposers
....	....	....
....	....	....
....	....	....

3 [A] Write the scientific term for each of the following :

1. The building unit of the living organism. (..................)
2. The living organisms that can make their own food by themselves through the process of photosynthesis. (..................)
3. The ability to do work. (..................)
4. A form of energy, that reaches ear causing hearing. (..................)
5. The teeth that grind food to make its swallowing easy. (..................)
6. The electric charges that flow through connecting wires. (..................)

[B] Give reasons for :

1. Attracting a balloon rubbed by the wool to a wall.

....

....

2. Decomposers have a great economical and environmental importance.

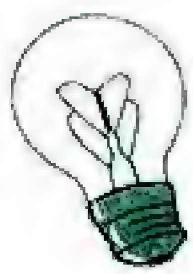
....

....

4 Choose the correct answer :

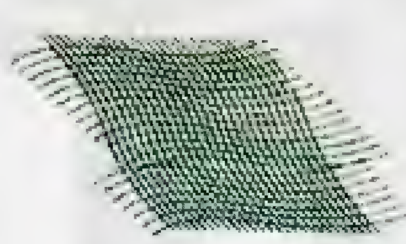
1. A hawk is an example of ....
   a. producers. b. consumers.
   c. decomposers. d. all the previous answers.
2. Bread mold fungus is a ....
   a. producer. b. consumer.
   c. decomposer. d. all the previous answers.
3. The .... is an example of unicellular living organisms.
   a. frog b. snake
   c. yeast fungus d. bean plant

4. Which of the following can be existed in a plant cell and can't be existed in an animal cell ? ....
   a. Nucleus.   b. Chloroplast.
   c. Cytoplasm.   d. plasma membrane.
5. .... secretes gastric juice that changes food into a semi-liquid substance.
   a. Large intestine   b. Small intestine   c. Stomach   d. Mouth
6. The length of the small intestine is about ....
   a. 7 metres.   b. 3 metres.   c. 4 metres.   d. 10 metres
7. Examine the following shapes :

(1)

Electric lamp

(2)

Copper wires

(3)

A piece of wool

(4)

A battery

(5)

A balloon

• Which of them can be used together to make an electric circuit ? ....
   a. 1 , 3 , 4   b. 1 , 2 , 4   c. 1 , 2 , 3   d. 1 , 4 , 5
• Which of them can be used together in generating static electricity ? ....
   a. 2 , 1   b. 3 , 2   c. 3 , 4   d. 3 , 5

23 Beni Suef Governorate — Ali Mubarak Language School

Answer the following questions :

1 [A] Choose the correct answer :

1. On rubbing your hands together .... energy is produced.
   a. heat   b. electric   c. kinetic
2. Among examples of unicellular living organisms is ....
   a. frog.   b. yeast fungus.   c. snake.
3. The organ which is responsible for warming air before entering the lungs is ....
   a. pharynx.   b. nose.   c. trachea.

[B] Give reasons for :

1. Decomposers cannot make their own food by themselves.
   ....
2. Green algae are called producers.
   ....

2 Part

2 **[A] Write the scientific term :**

1. The building unit in living organisms. (....................)
2. The electric charges that flow through wires. (....................)
3. A process by which oxygen enters the lungs. (....................)
4. It consists of similar or different tissues. (....................)

[B] Correct the underlined words :

1. The energy stored in toy spring is **chemical** energy. (....................)
2. **Dynamo** changes the chemical energy into electric energy. (....................)
3. Trachea is lined with **hairs** to eject up strange objects. (....................)

3 **[A] Complete the following :**

1. Sound is produced by ....
2. The food undergoes two processes in the digestive system which are .... and ....
3. The longest part of the digestive system is ....
4. .... gas is produced from the photosynthesis process.

[B] Define :

1. Energy.
....
2. Decomposer.
....

4 **[A] Put (✓) or (✗) :**

1. In solar cell, light energy changes into sound energy. (   )
2. The plant cell is surrounded by membrane only. (   )
3. Human teeth are divided into three incisors and twenty molars. (   )
4. Small bits of paper are attracted to rubber plastic ruler. (   )

[B] How can you keep your respiratory system healthy ? **(2 points only)**

1. ....
2. ....

24 El-Minia Governorate — Minia Educational Zone

Answer the following questions :

1 **[A] Choose the correct answer :**

1. .... are examples of producers.
   a. Green plants b. Rabbits c. Fungi d. Birds

2. Plants use .... in the photosynthesis process.
   a. nitrogen   b. carbon dioxide   c. oxygen   d. water vapour
3. Sound is a form of ....
   a. mass.   b. speed.   c. energy.   d. motion.
4. The function of the nervous system is ....
   a. digestion.   b. sensation.   c. excretion.   d. respiration.
5. The closed path of electric current is called ....
   a. battery.   b. electric circuit.   c. switch.   d. electric current.

[B] What happens when ... ?

1. Rubbing your hair with a comb ?
   ....
2. There are no blood capillaries around alveoli.
   ....

2 Complete the following statements :

1. The digestive system consists of two parts which are .... and ....
2. The digestive canal starts with .... and ends with ....
3. The building unit of a living organism is called ....
4. .... is the cleanest form of energy.
5. The main organs of the digestive system lie in .... cavity.
6. .... gas is released from the photosynthesis process.
7. The .... cell contains green plastids.
8. Bacteria feed on .... animals and plants.

3 [A] Put (✓) or (✗) :

1. Iodine solution is used to detect the presence of sugar. (   )
2. Force is the ability to do work. (   )
3. Digested food is absorbed in stomach. (   )
4. Spring stores potential energy. (   )

[B] Match the following :

(A)	(B)
1. Solar cell	a. produces light energy.
2. Violin	b. produces electric energy.
3. Electric lamp	c. changes kinetic energy into electric energy.
4. Dynamo	d. produces sound energy.

1. ....   2. ....   3. ....   4. ....

2 Part

4 **[A] Look at the opposite figure, then answer :**

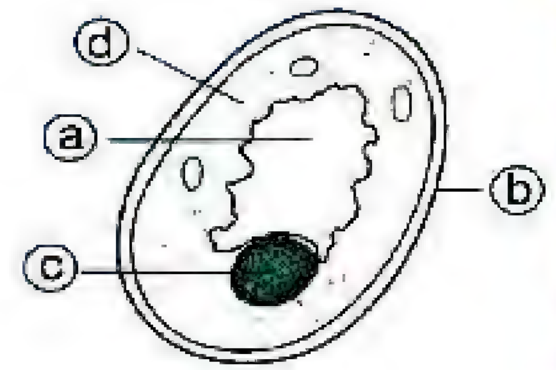
1. Label the figure :

   ⓐ ....

   ⓑ ....

   ⓒ ....

   ⓓ ....



2. The figure represents ....

[B] Give reasons for :

1. The electric circuit must contain a battery.

....

2. Nose is lined with hairs and mucous layer.

....

25 Assiut Governorate — Assiut Educational Directorate

Answer the following questions :

1 **[A] Complete the following statements :**

1. .... is the building unit of the living organism's body.
2. .... is responsible for cell division.
3. .... is the source of energy for plant when it forms its own food.
4. The sound originates due to .... of objects.
5. .... system helps the body to get rid of the harmful substances.
6. The plants need .... gas in photosynthesis process.

[B] Give reasons for :

1. Attracting the small bits of paper to a ruler that was rubbed by your hair.

....

....

2. Decomposers have a great economical and environmental importance.

....

....

2 **[A] Choose the correct answer :**

1. All the following living organisms are producers except ....

   a. wheat plant. b. maiz plant. c. green algae. d. bread mold.

2. The organ that turns food inside the mouth cavity and mixes it up with saliva is the ....
   a. esophagus. b. teeth. c. tongue. d. pharynx.
3. The path of electric current called ....
   a. battery. b. key. c. electric lamp. d. electric circuit.
4. The organ consists of similar or different ....
   a. tissues. b. systems. c. cells. d. bodies.
5. Inside the lungs, bronchioles end in ....
   a. blood capillaries. b. alveoli.
   c. cilia. d. cartilaginous rings.

[B] Compare between animal cell and plant cell by using the following table :

Cell parts	Animal cell	Plant cell
1. Cell wall :	....	....
2. Chloroplasts :	....	....
3. Small vacuoles :	....	....
4. Sap vacuole :	....	....

[C] What happens if ... ?

1. Tongue is not found in the mouth.
....
2. Stomach doesn't secrete gastric juice.
....
3. There is no blood capillaries in the nose.
....

3 [A] Match :

(A)	(B)
1. In the motor of fan	a. potential energy changes into kinetic energy.
2. In dynamo	b. electric energy changes into sound energy.
3. In solar cells	c. light energy changes into electric energy.
4. In electric lamp	d. electric energy changes into light energy.
5. In the radio	e. electric energy changes into kinetic energy.
6. In spring of children's toy	f. kinetic energy changes into electric energy.
	g. chemical energy changes into electric energy.

1. .... 2. .... 3. .... 4. .... 5. .... 6. ....

[B] Mention one function for each of the following :

1. Yeast fungus.

....

2. Plasma membrane.

....

4 [A] Put (✓) or (✗) :

1. The yeast fungus is an example of unicellular living organisms. (   )
2. Saliva digests protein. (   )
3. Bile juice helps in the digestion of fats. (   )
4. Consumers can make their own food by themselves through the process of photosynthesis. (   )
5. When rubbing my hands together potential energy is formed. (   )
6. When the Sun rays fall on a lens that put over a paper, the paper is burned. (   )

[B] What is meant by ... ?

1. The cell.

....

2. Dynamic electricity.

....

26 Sohag Governorate — Sohag Educational Directorate

Answer the following questions :

1 [A] Write the scientific term :

1. The building unit of the living organisms body. (....................)
2. The energy stored in the spring of toy car. (....................)
3. The closed path of the electric current. (....................)
4. A process by which oxygen gas enters the lungs. (....................)

[B] Classify the following living organisms into producers, consumers and decomposers :

(Human - Corn plant - Lion - Yoghurt bacteria).

Producers	Consumers	Decomposers
....	....	....
....	....	....

2 **[A] Complete the following sentences :**

1. Diaphragm moves .... during inhalation and moves .... during exhalation.
2. Green plants need .... gas in photosynthesis process.
3. In the solar cells, ... energy changed into .... energy.
4. The tissue is made up of a group of ....

[B] Give reasons for :

1. You hear a sound when you tap a tuning fork.

....

2. Eating orange and guava is important.

....

3 **[A] Choose the correct answer :**

1. It is found in plant cell and not found in animal cell ....
   a. nucleus. b. cytoplasm.
   c. green plastid. d. plasma membrane.
2. They are two kinds of electricity which are ....
   a. static and thermal. b. thermal and kinetic.
   c. static and current. d. current and thermal.
3. The first part of small intestine is called ....
   a. pharynx. b. duodenum. c. stomach. d. ileum.
4. .... is used in making bread.
   a. Bread mold fungus b. Yeast fungus
   c. Amoeba d. Bacteria
5. Gas exchange during the process of respiration occurs in the ....
   a. trachea. b. nose. c. mouth. d. alveoli.

[B] What is name of produced energy from ... ?

	Produced energy
1. Dynamo.	....
2. Rubbing your hands.	....
3. Electric fan.	....

2 Part

4 [A] Choose from column (B) what suits it in column (A) then write the letter of choice under the table :

(A)	(B)
1. Battery	a. it is a common cavity leads to esophagus and trachea.
2. Electric switch	b. it is the source of electric current.
3. Pharynx	c. it is a muscular tube connecting to stomach.
4. Esophagus	d. It used to open and close the electric circuit.

1. .... 2. .... 3. .... 4. ....

[B] Put (✓) or (✗) :

1. The animal cell is surrounded by the cell wall. (   )
2. Small bits of paper are attracted to a rubbed plastic ruler. (   )
3. Exhaled air contains carbon dioxide gas and water vapour. (   )
4. Consumers can make their food by themselves through the process of photosynthesis. (   )

27 Luxor Governorate — Luxor Educational Directorate

Answer the following questions :

1 [A] Choose the correct answer :

1. The plant uses.............. in photosynthesis process.
   a. oxygen gas b. carbon dioxide gas
   c. water vapour d. sugar
2. The stomach belongs to the .... system.
   a. digestive b. reproductive c. urinary d. nervous
3. From examples of electric energy, the energy produced from ....
   a. piano. b. fan. c. battery. d. heater.
4. The vibration of an object produces .... energy.
   a. light b. heat c. sound d. electric

[B] Give reasons for each of the following :

1. The green plants are considered as producers.
   ....
2. On removing a nail from a wooden plate, the nail becomes warm.
   ....

2 **[A] Complete the following sentences:**

1. .... is the first part of the small intestine, where bile juice and pancreatic juice are poured.
2. In solar cells, ... energy changes into .... energy.
3. To check the existence of starch in the plant leaf, we use ....
4. Energy is the ability to do ....
5. The respiratory system exists in .... cavity.

[B] Give an example for :

1. Producers.
   ....
2. Consumers.
   ....

3 **[A] Write the scientific term for each of the following :**

1. Living organisms that depend on other living organisms in their food. (....................)
2. The energy stored in the spring of a toy car. (....................)
3. A group of organs in the shape of long pipe with length of 9 – 10 metres. (....................)
4. A gas that is released from photosynthesis process. (....................)
5. The first organ of the respiratory system, where oxygen enters the body. (....................)

[B] What is form of energy that is produced from ... ?

1. Rubbing your hands together : ....
2. Running of a pupil : ....
3. Passing the electric current through an electric lamp : ....
4. Ringing of a school bell : ....

4 **[A] Correct the underlined words :**

1. A hawk is an example of **producers**. (....................)
2. Large intestine ends with **ileum**. (....................)
3. In the motor of a car, electric energy changes into **chemical** energy. (....................)
4. The algae are from **consumer** organisms. (....................)
5. When knocking on a door, the kinetic energy changes into **electric** energy. (....................)
6. Iodine solution gives **red** colour when added to starch. (....................)

2 Part

[B] Mention one function (importance) for each of the following :

1. The decomposers :
....

2. The dynamo.
....

28 Aswan Governorate — Mm Yakoub language school

Answer the following questions :

1 **[A] Complete the following statements :**

1. .... is a muscular tube that allows food to pass from pharynx to stomach.
2. Lightning in the sky is a phenomenon related to .... electricity.
3. Sound generates due to .... of objects.
4. Green plants need .... gas in photosynthesis process.
5. We get .... energy from the solar cells.

[B] Write the scientific term for each of the following :

1. Electric charges that flow through connecting wires for long distances. (..................)
2. The ability to do work. (..................)
3. A form of energy that reaches to ear causing the hearing. (..................)
4. Tiny air sacs found in the two lungs. (..................)

2 **[A] Choose the correct answer :**

1. The algae are from ....
   a. producers. b. consumers. c. decomposers.
2. The .... is an example of unicellular living organisms.
   a. frog b. snake c. yeast fungus
3. When rubbing your hands together it generates ....
   a. heat energy. b. electric energy. c. sound energy.
4. The path of electric current called ....
   a. battery. b. key. c. electric circuit.
5. The plants make their own food in the process of ....
   a. respiration. b. photosynthesis. c. circulation.
6. It is found in plant cell and not found in animal cell is ....
   a. nucleus. b. cytoplasm. c. green plastid.

[B] Give reasons of the following statements :

1. Plant cells contain chloroplasts.
....
2. Attraction of small bits of paper to a ruler rubbed by your hair.
....

3 [A] Put (✓) or (✗) in front of the following statements :

1. Plant grows in the presence of sunlight. (   )
2. Gastric juice digests fats. (   )
3. Saliva digests protein. (   )
4. Animals are producers. (   )
5. The animal cells are surrounded by the cell wall. (   )
6. In radio the electric energy is changed into chemical energy. (   )

[B] What is the name of produced energy when ... ?

1. Lighting of an electric lamps.
....
2. Rotation of the dynamo.
....

4 [A] correct the underlined words in the following :

1. **The nucleus** controls the substances that enter or leave the cell. (.....................)
2. **Consumers** are living organisms that get their food through decomposing the organic wastes. (.....................)
3. In the electric heater, the electric energy is changed into **chemical** energy. (.....................)
4. **Cilia** closes the larynx during swallowing of food. (.....................)

[B] Classify the following into producers, consumers and decomposers :

(Lion - Green plant - Bread mold fungus - Green algae - Human).

Producers	Consumers	Decomposers
....	....	....
....	....	....
....	....	....

2 Part

29 South Sinai Governorate — Tur Sinai Educational Directorate

Answer the following questions :

1 [A] Complete the following statements :

1. In solar cells, the .... energy changes into electric energy.
2. The plant cell is characterized than the animal cell by the presence of ....
3. In electric iron, ... energy changes into .... energy.
4. We can test presence of starch in plant leaves using ....

[B] Give reasons for :

1. Green plants is called producer organisms.

....

2. The exhaled air differs from the inhaled air.

....

[C] Mention how you keep the respiratory system healthy.

....

....

....

2 [A] Put (✓) or (✗) :

1. Bile juice helps in the digestion of fats. ( )
2. In photosynthesis green plants produce oxygen gas. ( )
3. The current electricity can be generated by rubbing an object. ( )
4. Organ is composed of a group of tissues. ( )
5. In electric heater, electric energy changes into kinetic energy. ( )

[B] What is the form of produced energy from ... ?

1. Rubbing your hands together : ....
2. Knocking on the door of a classroom : ....
3. Operating electric fan : ....

[C] Classify the following organisms into (producers – consumers – decomposers) :

(Dog - Lion - Maize plant - Green algae - Yeast fungi - Human - Yoghurt bacteria).

Producers	Consumers	Decomposers
....	....	....
....	....	....
....	....	....

3 **[A] Choose the correct answer :**

1. A .... is an example of unicellular living organisms.
   a. frog b. bacteria c. bean plant
2. Plants use .... gas in the photosynthesis.
   a. nitrogen b. oxygen c. carbon dioxide
3. In dynamo, kinetic energy changes into .... energy.
   a. chemical b. electric c. heat
4. Which of the following is not a component of electric circuit ? ....
   a. Battery. b. Copper wire. c. Wool piece.
5. The undigested food goes to the ....
   a. stomach. b. small intestine. c. large intestine.

[B] What is the function of electric switch (key) ?

....

[C] The opposite figure represents yeast fungus. Look at the figure, then answer :



1. Write what the numbers refer to :
   ① .... ② ....
   ③ ....
2. What is the economic importance of yeast fungus ?
   ....

4 **[A] Write the scientific term of each of the following :**

1. Living organisms that decompose remains of living organisms. (............)
2. It is a common cavity leads to esophagus and trachea. (............)
3. A closed path of electric current. (............)
4. A bility to do work. (............)
5. The process by which a human obtains energy from digested food. (............)

[B] What happens if ... ?

1. Knocking a tuning fork on a wooden table.
   ....
2. Absence of decomposers from nature.
   ....
   ....

2
Part

[C] What are the benefits of the solar cell ?

....

....

....

30 Matrouh Governorate — Matrouh Educational Directorate

Answer the following questions :

1 Complete the following statements:

1. The length of the digestive canal is about .... metres.
2. Sound originates due to ....
3. Green plants need .... gas in photosynthesis process.
4. Diaphragm moves .... during inhalation and moves .... during exhalation.
5. In solar cells, ... energy changes into .... energy.
6. The main organs of the digestive system lie in .... cavity.

2 [A] Choose the correct answer :

1. From examples of the producers ....
   a. fish. b. rabbit. c. bean.
2. It is found in the plant cell and not found in the animal cell ....
   a. nucleus. b. cytoplasm. c. chloroplast.
3. The .... is an example of unicellular living organisms.
   a. frog b. yeast fungus c. snake
4. The tissue is a group of similar ....
   a. organs. b. cells. c. systems.

[B] Put (✓) or (✗) :

1. The animal cells are surrounded by the cell wall. ( )
2. Gastric juice digests fats. ( )
3. When the Sun rays fall on a lens that put over a paper, the paper is burned. ( )
4. Green algae are from producers. ( )

5. The iodine solution is used to detect the presence of starch. (   )
6. Rubbing object produced sound energy. (   )

3 **[A] Write the scientific term of each of the following :**

1. A process by which oxygen gas enters the lungs. (..................)
2. A form of energy that reaches to ear causing the hearing. (..................)
3. The building unit of living organism. (..................)
4. The type of electricity that can formed by rubbing. (..................)

[B] Give reasons for :

1. Green plants are called producers.
....
2. Digestion process is very important.
....
....

4 **[A] Correct the underlined words :**

1. The **nucleus** controls the substances that enter or leave the cell. (..................)
2. **Consumers** are living organisms that get their food through decomposing the organic wastes. (..................)
3. In the electric heater, the electric energy is changed into **chemical** energy. (..................)
4. The rot formed on the bread is **dead** organisms called fungi. (..................)
5. All the biological operations occur in **cell wall**. (..................)
6. In dynamo the kinetic energy changed into **light** energy. (..................)

[B] What happens in the following cases ... ?

1. Rubbed a balloon with a piece of wool.
....
2. Decomposers are not present in the nature.
....
....

PART 1

Unit One

Lesson 1

1. 1. d. magnetism. 2. b. circulatory
3. b. sensation. 4. a. Reproductive
5. c. liver. 6. a. digestive
7. b. Mouth
8. d. four incisors, two canines and ten molars.
9. b. incisors and canines.
10. c. tongue. 11. c. saliva.
12. c. Pharynx 13. b. Esophagus
14. c. Stomach 15. d. stomach.
16. a. seven metres.
17. b. duodenum. 18. a. liver.
19. b. duodenum. 20. a. Bile juice
21. b. duodenum. 22. c. small intestine.
23. a. Rectum 24. c. large intestine.
25. a. eating much food that contains large amounts of fats.

2. 1. (✓) 2. (✓)
3. (×) .... pharynx and small intestine ....
4. (✓) 5. (×) .... 9 – 10 metres.
6. (×) .... four incisors , two canines and ten molars.
7. (✓) 8. (✓)
9. (×) Esophagus ....
10. (×) .... stomach.
11. (✓) 12. (×) .... in the small intestine.
13. (✓) 14. (×) Bile juice ....
15. (×) .... starch.
16. (✓) 17. (✓)

3. 1. starch. 2. Bile juice
3. Small intestine 4. anus.
5. pancreas. 6. Small intestine
7. small intestine. 8. small intestine.

4. 1. The digestive system.
2. The respiratory system.
3. The urinary system.
4. The nervous system.
5. The circulatory system.
6. The reproductive system.
7. The digestion process.

8. The digestive system.
9. The digestive canal.
10. Mouth. 11. Incisors and canines.
12. Molars. 13. Tongue.
14. The salivary glands.
15. Saliva. 16. Digestive enzymes.
17. Pharynx. 18. Esophagus.
19. Stomach. 20. Stomach.
21. Gastric juice. 22. Pancreas.
23. Bile juice. 24. Ileum.
25. Small intestine. 26. Large intestine.
27. Liver. 28. Bile juice.

5. 1. Nutrition – motion
2. organs – tissues – cells
3. The cell 4. The digestive
5. the respiratory 6. The urinary
7. reproductive system 8. digestion
9. the digestive canal – the digestive canal supplementaries.
10. pharynx – stomach
11. liver – pancreas. 12. the abdominal
13. 9 – 10 14. mouth – anus.
15. 16 16. mouth.
17. three – saliva.
18. Digestive enzymes
19. Esophagus 20. Stomach
21. stomach.
22. gastric – proteins
23. stomach – small intestine.
24. Bile juice – saliva
25. duodenum (small intestine).
26. the small intestine.
27. duodenum – ileum. 28. Duodenum
29. ileum.
30. Pancreatic juice – bile juice
31. fats – fatty emulsion.
32. ileum (small intestine) – blood.
33. digestion – absorption.

6. 1. To keep the human alive.
2. To let the body benefits from it.
3. Because it changes the complex food substances into simple food substances to let the body gets benefit from them.
4. To change (digest) starch into simple substances called sugar.
5. To perform different functions as cutting, tearing and grinding food.



6. Because they grind food.
7. Because bile juice, pancreatic juice and intestinal juice that are poured in the small intestine to complete the digestion of food.
8. Because it helps in the digestion of fats, where it changes fats into fatty emulsion.
9. Because it secretes bile juice that changes fats into fatty emulsion.
10. Because it is digested and changed into sugar by saliva which is secreted in the mouth.
11. Because the complete digestion of different types of food and the absorption of food occur in it.
12. Because food is not completely digested in the stomach.
13. Because it contains large amounts of fats.
14. Because bile juice is poured in duodenum where bile juice helps in digestion of fats and changes it into fatty emulsion.
15. Because stomach secretes gastric juice that makes incomplete digestion of proteins, while the complete digestion of proteins occurs in small intestine.

7. 1. Starch will not change into sugar in the mouth.
2. The food cannot be mixed well with saliva and also we cannot taste the food.
3. Fats will not be digested and the human body cannot get their benefit.
4. Oil and water are mixed together forming fatty emulsion.
5. Proteins are not digested into simple food substances.
6. Food can't be completely digested and also can't be absorbed , so the human can't get benefit from food.

8. 1. It is a process of changing food from a complex food into simple substances to let the body benefits from them.
2. They are digestive substances that digest food and convert it into simple substances.

9. 1. It breaks down complex food into simple substances to let the body gets their benefits.
2. It gives us the ability to feel, see, hear, smell and taste.
3. It helps the body to get rid of the harmful substances.

4. Cutting and grinding food with the teeth, digestion of starch into sugar.
5. It is responsible for tasting food.
6. It contains digestive enzymes that change (digest) starch into simple substances called sugar.
7. It secretes gastric juice that makes incomplete digestion of proteins.
8. It secretes bile juice in the small intestine (duodenum).
9. It helps in the digestion of fats, where it changes fats into fatty emulsion.
10. Absorption of the digested food.
11. It stores wastes, then ejects them outside the body through anus.
12. They secrete saliva liquid in the mouth that change starch into simple substances called sugar.

10. – Heart ⟶ The circulatory system.
– Stomach ⟶ The digestive system.
– Trachea ⟶ The respiratory system.
– Kidney ⟶ The urinary system.
– Brain ⟶ The nervous system.

11. Salivary glands secrete saliva, while liver secretes bile juice.

12. 1. Chew the food well.
2. Don't eat much food that contains large amounts of fats as fast meals.
3. Avoid having food that contains flavour additives.
4. Don't buy food from street sellers avoid the infectious diseases.
5. Practice sports regularly.

13. 1. ⓐ Liver. ⓑ Stomach.
ⓒ Pancreas. ⓓ Gall bladder.
2. It secretes the gastric juice that makes incomplete digestion of proteins.
3. It stops secreting bile juice, so fats can't be digested.

14.

Bile juice	Pancreatic juice
- It is secreted by liver in the small intestine (duodenum).	- It is secreted by pancreas in the small intestine (duodenum).
- It digests fats and turns it into fatty emulsion.	- It helps in digestion of food.

15. (A) ① Mouth. ② Esophagus.
③ Stomach. ④ Pancreas.
⑤ Rectum. ⑥ Anus.
⑦ Small intestine. ⑧ Large intestine.
⑨ Liver. ⑩ Salivary glands.

(B) 1. ③ 2. ⑨ 3. ② 4. ① 5. ⑩

(C) It stores wastes, then ejects them outside the body through anus.

(D) ⑦

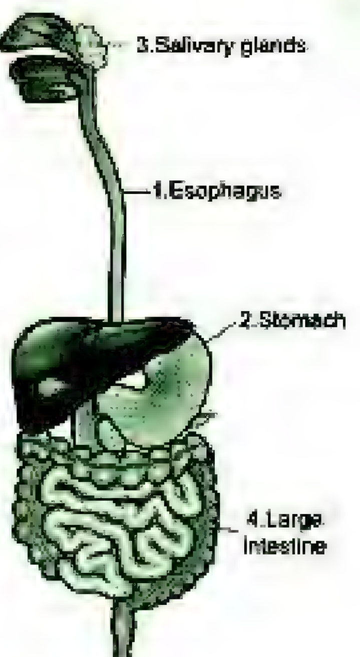
(E) It secretes bile juice that helps in the digestion of fats as it changes fats into fatty emulsion.

Timss Questions

1. a. Canines. b. Urinary system.
c. Reproductive system. d. Stomach.
e. Ileum.

2. a. Semi-liquid substance.
b. Fatty emulsion. c. Sugar.

3. a.



b. Urinary bladder.

4. a. Oil and water don't mix.
b. Bile juice makes oil and water mix together forming fatty emulsion.

5. 1. Salivary glands. 2. Liver.
3. Pancreas. 4. Ileum.
5. Stomach.

Lesson 2

1. 1. b. oxygen gas. 2. b. respiration
3. c. stomach. 4. c. lung
5. b. nose. 6. c. pharynx.
7. d. cartilaginous rings
8. c. Ejecting up dust. 9. a. Larynx
10. d. (a) and (b). 11. c. Alveoli
12. a. Diaphragm 13. b. alveoli.
14. b. ribs (rib cage). 15. a. inhalation
16. b. exhalation 17. d. inhalation
18. a. move up.
19. b. carbon dioxide 20. b. running
21. c. carbon dioxide. 22. d. alveoli.
23. c. Blood ⟶ Alveoli ⟶ Bronchus ⟶ Trachea ⟶ Larynx ⟶ Pharynx ⟶ Nose.
24. d. smoking or being a passive smoker.

2. 1. (✓) 2. (✓) 3. (✓)
4. (✗) .... to warm air before entering the lungs.
5. (✓) 6. (✓) 7. (✓)
8. (✓) 9. (✓)
10. (✗) .... in the two lungs. 11. (✓)
12. (✗) .... in the alveoli.
13. (✗) .... includes two processes which are inhalation and exhalation.
14. (✓) 15. (✗) Inhalation ....
16. (✓) 17. (✓) 18. (✓)
19. (✓) 20. (✓) 21. (✓)
22. (✗) .... through your nose not through your mouth.
23. (✓)
24. (✗) .... can respire.

3. 1. the nose. 2. thoracic
3. Epiglottis 4. cilia
5. exhalation 6. carbon dioxide
7. alveoli. 8. Gases exchange
9. carbon dioxide

4. 1. Respiration process.
2. Oxygen gas.
3. The respiratory system.
4. Carbon dioxide gas. 5. Nose.
6. Pharynx. 7. Trachea.
8. Trachea. 9. Larynx.



10. Epiglottis. 11. Bronchi.
12. Alveoli. 13. Two lungs.
14. The inhalation process.
15. The exhalation process.
16. The inhalation process.
17. The inhalation process.
18. The exhalation process.
19. Diaphragm. 20. The exhaled air.
21. Carbon dioxide gas.

5. 1. oxygen – respiration process.
2. Respiration process 3. the respiratory
4. the thoracic
5. nose – trachea – two bronchi
6. Blood capillaries
7. mucous layer – hairs
8. digestive – respiratory
9. cartilaginous rings.
10. the larynx 11. Epiglottis
12. two bronchi. 13. Lungs – ribs (rib cage).
14. alveoli. 15. bronchioles – alveoli.
16. Diaphragm 17. Diaphragm
18. inhalation – exhalation
19. increases 20. inhalation – exhalation
21. Exhalation
22. the thoracic cavity – narrow.
23. down – up
24. carbon dioxide gas – water vapour.
25. clear limewater.
26. blood capillaries
27. alveoli – blood capillaries.
28. cancer – death.
29. vitamin "C" – guava – orange.

6. 1. Because it gives the body of the living organism the needed energy to do all the body activities.
2. To filter the air from dust and microbes before entering the two lungs.
3. Because the nose is lined with:
– Hairs and mucous layer to filter the air from dust and microbes.
– Blood capillaries to warm the air before entering the two lungs.
4. To keep it permanently open.
5. To warm air before entering the lungs.

6. To eject up strange objects as dust.
7. Due to the presence of epiglottis that closes the trachea during swallowing.
8. To help the body in obtaining more energy.
9. Because it contains carbon dioxide gas.
10. Because the diaphragm muscle contracts and moves down and ribs rise upwards, so the volume of chest cavity increases.
11. To allow the exchange of gases between them.
12. To allow the exchange of gases.
13. Because the exhaled air is rich in carbon dioxide gas and water vapour, while inhaled air is rich in oxygen gas.
14. To keep the respiratory system healthy.
15. To provide us with vitamin "C" that is necessary to keep the respiratory system healthy.

7. 1. Dust and microbes will enter the respiratory system.
2. The air will not be warmed before entering the lungs.
3. The trachea will not be opened all the time, so we can't breathe well.
4. Some food particles or water will enter the trachea during swallowing.
5. Strange bodies as dust will enter the respiratory system.
6. The exchange of gases between them will not occur.
7. The thoracic cavity enlarges and the air rich in oxygen gas enters the two lungs through nose, inhalation process occurs.
8. The thoracic cavity becomes narrow and the air rich in carbon dioxide gas is expelled out of the two lungs through nose, exhalation process occurs.
9. The clear limewater becomes turbid (milky).
10. Formation of water droplets on the mirror due to the condensation of water vapour.

8. 1. It gives the body of the living organism oxygen to burn food to get the needed energy to do all the body activities.
2. – It is lined with hairs and mucous layer to filter the inhaled air from dust and microbes before entering the lungs.
– It is lined with blood capillaries to warm the inhaled air before entering the lungs.

3. Filtration of the inhaled air from dust and microbes before entering the lungs.
4. Warming the inhaled air before entering the lungs.
5. It contracts and moves down to help in inhalation process and it relaxes and moves up to help in exhalation process.
6. It makes the trachea permanently opened for breathing.
7. a. It has cilia to eject up strange objects as dust.
   b. It is supported by incomplete cartilaginous rings to keep the trachea permanently opened for breathing.
8. It closes the larynx (or trachea) during swallowing to prevent food from entering the trachea.
9. Gases exchange occurs in it.
10. They eject up the dust out of the respiratory system.
11. They have air sacs (alveoli) in which gases exchange takes place.
12. The exchange of gases occurs between blood in blood capillaries and alveoli.
13. It is used to detect the presence of carbon dioxide gas.

9.

Points of comparison	Inhalation process	Exhalation process
Definition :	It is a process by which air enters the lungs.	It is a process by which air is expelled out of the lungs.
Diaphragm muscle :	It contracts and moves down.	It relaxes and moves up.
Movement of ribs :	They rise upwards.	They move downwards.
Size of thoracic cavity :	Increases.	Decreases.

10. Look at the main book on page (42).

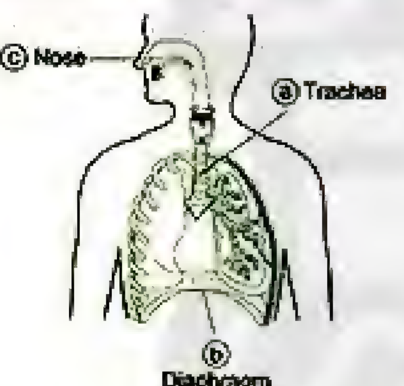
11. 1. Avoid being in crowded or poor ventilation places.
2. Keeping off the severe cold.
3. Eating fruits rich in vitamin "C" as orange and guava.
4. Stop smoking or being a passive smoker.

12.

Letter	Organ's name	Function
A	Bronchus	Branches from the trachea to the lungs.
B	Trachea	- It is supported by incomplete cartilaginous rings to be permanently opened for breathing. - It is lined with cilia to eject up the strange objects.
C	Lung	Gases exchange takes place in it as it has alveoli.
D	Alveoli	Gases exchange occurs in it.
E	Diaphragm	It contracts and moves down to help in inhalation process and it relaxes and moves up to help in exhalation process.

Timss Questions

1.



2. 1. Passage of oxygen gas during inhalation process.
2. Passage of carbon dioxide gas during exhalation process.

3. 1. the two lungs. 2. the thoracic cavity.
3. the diaphragm. 4. exhalation
5. inhalation

4.

The inhalation process	The exhalation process
a. The diaphragm muscle contracts and moves down. d. The thoracic (chest) cavity enlarges and air rich in oxygen gas enters the lungs. f. The ribs move upward.	b. The ribs moves downwards. c. The air rich in carbon dioxide gas and water vapour is expelled out of the lungs. e. The diaphragm muscle relaxes and moves up.

Lesson 3

1. 1. c. systems ⟶ organs ⟶ tissues ⟶ cells.
2. d. (a) , (b) and (c) 3. b. Heart.
4. b. an organ.
5. a. a group of similar cells in structure and function.
6. b. organs. 7. b. animal cell
8. c. cytoplasm. 9. b. Chloroplasts.
10. a. cytoplasm
11. b. Plasma membrane
12. a. Cytoplasm 13. a. cytoplasm.
14. a. Nucleus
15. a. Chloroplasts 16. c. chloroplasts.
17. d. (a) and (b) 18. c. yeast fungus
19. c. chloroplasts. 20. d. (a) and (b).

2. 1. d 2. e 3. b 4. c 5. a

3. 1. (✓) 2. (✗) .... plant organs.
3. (✗) .... is the cell.
4. (✗) .... the plant cell from outside.
5. (✗) .... of the plasma membrane.
6. (✗) .... cytoplasm and cell membrane.
7. (✗) The plant cell is ....
8. (✗) Cytoplasm ....
9. (✓)
10. (✓) 11. (✓)
12. (✗) .... is a useful ....
13. (✗) .... making bread and alcohol.

4. 1. A plant cell 2. cytoplasm.
3. The plasma membrane 4. cell wall.
5. cells.

5. 1. Tissue. 2. Organ.
3. System. 4. Organs of a plant.
5. The cell. 6. The cell.
7. The plant cell. 8. The animal cell.
9. The plasma membrane.
10. The plant cell. 11. The cell membrane.
12. Cytoplasm.
13. The green plastid (chloroplast).
14. Nucleus. 15. Nucleus.
16. Yeast fungus. 17. Yeast fungus.
18. The green plastids.

6. 1. animal organs – plant leaf
2. the cell. 3. The plant cell
4. a group of tissues. 5. cells.
6. organs – tissues – cells
7. cell wall – plasma membrane – nucleus
8. Cell wall – the animal
9. The cell membrane
10. Nucleus – green plastids
11. the cell wall – the plasma membrane.
12. plasma membrane – cytoplasm – nucleus.
13. cell wall – green plastids.
14. yeast fungus
15. cell wall – nucleus – cytoplasm.
16. the cell wall 17. bread – alcohol.

7. 1. Because they consist of a group of tissues.
2. Because it consists of a group of organs.
3. Because it organizes the biological operations in the cell and it is responsible for the cell division.
4. Because it controls the substances that enter or leave the cell.
5. Due to the presence of green plastids that are responsible for making food by the photosynthesis process.
6. Because they are responsible for making food by the photosynthesis process.
7. Because it supports the plant cell and gives it a definite shape.
8. Because it has the ability to do all the biological functions.
9. Due to the presence of cell wall that determines the cell shape.
10. Because it is used in making bread and alcohol.
11. Because during making bread, yeast produces carbon dioxide gas that causes the swelling of bread and makes it porous and light.

8. 1. The plant cell has an indefinite shape.
2. The plants can't make their own food.

9. 1. It organizes the biological operations in the cell and it is responsible for the cell division.
2. All the biological operations of the cell occur in it.
3. It controls the substances that enter or leave the cell.
4. They are responsible for making food by the photosynthesis process.
5. It supports the plant cell and gives it a definite shape.
6. It is used in making bread and alcohol.

10.

Points of comparison	Plant cell	Animal cell	Yeast fungus
1. Nucleus :	Present.	Present.	Present.
2. Cytoplasm :	Present.	Present.	Present.
3. Chloroplasts :	Present.	Absent.	Absent.

11. a. the plant cell.
b. ① sap vacuole. ② nucleus.
③ cytoplasm. ④ cell wall.
⑤ chloroplasts. ⑥ cell membrane.
c. the animal cell.
d. ① cytoplasm. ② plasma membrane.
③ nucleus. ④ Small vacuoles.

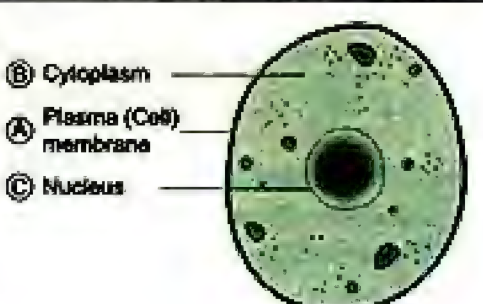
Timss Questions

1. d. Controls the cell division.

2. Figure (a), because it doesn't have cell wall and green plastids.

3. The volume of the balloon increases because yeast fungus changes molasses (sugar solution) into alcohol and carbon dioxide gas that makes the balloon inflat.

4.



5.

Plant cell	Animal cell
a. It has cell wall that gives the cell a definite shape.	b. It has small vacuoles.
d. It has a sap vacuole.	c. It has an indefinite shape due to absence of cell wall.

Lesson 4

1. 1. d. (a), (b) and (c)
2. d. (a) and (b) 3. a. Green algae
4. a. green plants. 5. b. green parts
6. b. photosynthesis 7. b. water.
8. c. carbon dioxide gas
9. c. oxygen
10. c. absence of sunlight.
11. d. Fungus.
12. b. Consumers
13. c. bread mold fungus.
14. a. Cow 15. b. consumers.
16. a. Lion 17. d. (b) and (c).
18. d. (b) and (c) 19. a. decomposers.
20. c. Fungi 21. b. decomposer.
22. b. Fungi.
23. d. using them in the photosynthesis process.

2. 1. (✓) 2. (✓)
3. (✗) Consumers .... depend on producers ....
4. (✗) .... of sunlight, carbon dioxide gas, water and mineral salts.
5. (✗) .... photosynthesis process.
6. (✓)
7. (✗) Carbon dioxide gas ....
8. (✗) .... , the plant takes carbon dioxide gas .... oxygen gas.
9. (✓)
10. (✗) .... presence of starch.
11. (✗) Producers ....
12. (✓)
13. (✗) .... that feed on consumers.
14. (✗) Decomposers ....
15. (✗) .... decomposer organisms.
16. (✓)
17. (✗) .... producers.
18. (✗) .... decomposers.
19. (✗) Producers ....

3. 1. Carbon dioxide 2. blue
3. Producers 4. Consumers
5. Decomposers

4. 1. Photosynthesis process.
2. The green plants.
3. Photosynthesis process.
4. Chloroplasts.
5. Oxygen gas and starch or sugar.
6. The Sun. 7. Carbon dioxide gas.



8. Oxygen gas. 9. Iodine solution.
10. Producers. 11. Producers.
12. Consumers. 13. Consumers.
14. Decomposers. 15. Decomposers.

5. 1. The Sun.
2. producers – consumers – decomposers.
3. Producers
4. Green plants – green algae
5. Photosynthesis process
6. sunlight – carbon dioxide gas – water and mineral salts.
7. Oxygen – starch or sugar
8. chloroplasts – green
9. water – mineral salts – carbon dioxide gas
10. carbon dioxide – oxygen
11. iodine solution.
12. oxygen
13. blue.
14. oxygen gas – carbon dioxide gas
15. oxygen – carbon dioxide
16. Consumers
17. consumer – consumers.
18. decomposers.
19. Some types of bacteria – bread mold fungus
20. Green plant – bread mold fungus
21. a decomposer.

6. 1. Because they can make their own food by the photosynthesis process.
2. To absorb sunlight that is necessary for photosynthesis process.
3. To make their own food by the photosynthesis process.
4. Because sunlight is necessary for plant to make their own food by the photosynthesis process.
5. Because sunlight is necessary for plants to make their own food by the photosynthesis process.
6. Because its colour changes into blue in the presence of starch.
7. Because they don't make their own food, but they depend on producers to get their food.
8. Because they don't make their own food, but they depend on consumers that previously fed on producers to get their food.
9. Because it gets its food through decomposing the bread.
10. Due to absence of chloroplasts.
11. Because it is exposed to decomposers in air as bacteria that decompose food causing its spoiling.
12. Because :
- They help us get rid of dead bodies of organisms and plant remains.
- They increase the soil fertility.
- They are used in a lot of industries.
13. Because they depend on themselves to make their own food by photosynthesis process.

7. 1. Their green leaves become yellow and weak, because sunlight is necessary for plants to make their own food.
2. They can't make their own food, because chloroplasts absorb sunlight that is necessary for photosynthesis.
3. All living organisms will die, because the plant is the main source of food and energy for all living organisms.
4. The soil fertility decreases and the dead bodies of organisms will remain in nature that cause many diseases.

8. 1. A biological process takes place in the green parts (leaves) of a plant to make its own food.
2. They are living (autotrophic) organisms that can make their own food by themselves through the photosynthesis process.
3. They are living organisms that depend on producers directly or indirectly to get their food.
4. They are living organisms that get their food through decomposing the organic wastes as dead bodies, plant remains and decayed food.

9. 1. They absorb the sunlight that is necessary for plants to make their own food by the photosynthesis process.
2. It is used to test the presence of starch.
3. It is necessary for plants to make their own food by the photosynthesis process.

4. – They help us get rid of dead bodies of organisms and plant remains.
   – They increase the soil fertility.
   – They are used in a lot of industries.

10. Look at the main book on page (88).

11. – Producers : Corn plant – Green algae.
– Consumers : Dog – Lion – Human.
– Decomposers : Yeast fungus – Yoghurt bacteria.

12. 1. a. (A) b. (B)
2. Oxygen gas and starch or sugar.

Timss Questions

1. b. The leaves don't expose to sunlight.

2. e. (c) and (d).

3. a. Mineral salts. b. Carbon dioxide gas.
c. Photosynthesis process.

4. a. The leaves of plant (B) become yellow and weak but the leaves of plant (A) are green and strong because the sunlight is necessary for plants to make their own food by photosynthesis process.
b. c. To allow the air only passes to the plant.

Unit Two

Lesson 1

1. 1. d. (a) and (b). 2. d. (a) , (b) and (c)
3. a. potential energy.
4. d. sound energy.
5. a. dry cell (battery).
6. a. Kinetic energy 7. b. sound
8. c. energy. 9. c. sound
10. c. spring of the childrens' toys.
11. d. (a) , (b) and (c). 12. d. (a) and (b).
13. a. kinetic energy changes into sound energy.
14. a. heat
15. a. electric energy.
16. b. dynamo of a bicycle.
17. a. electric energy.
18. b. light energy changes into heat energy.
19. a. light energy. 20. a. solar cells.
21. d. (a) and (b)

2. 1. (✗) Energy ....
2. (✗) .... is potential energy.
3. (✗) .... is heat energy.
4. (✓) 5. (✓)
6. (✗) Sound is ....
7. (✓) 8. (✓)
9. (✓)
10. (✗) .... into sound energy.
11. (✗) .... violin and the piano ....
12. (✗) Kinetic energy changes into heat energy ....
13. (✓) 14. (✓)
15. (✓) 16. (✗) .... solar cells.

3. 1. work. 2. heat energy
3. kinetic energy. 4. Sound
5. electric 6. In the electric lamp
7. In the solar heater 8. heat energy.

4. 1. Energy. 2. Potential energy.
3. Sound energy. 4. Electric energy.
5. Heat energy. 6. Kinetic energy.
7. Light energy. 8. Sound energy.
9. Sound energy. 10. Piano or violin.
11. Kinetic energy. 12. Kinetic energy.
13. Electric energy. 14. Heat energy.
15. Light energy.

5. 1. work.
2. Potential energy – kinetic energy – electric energy
3. potential 4. light – kinetic
5. Heat energy – sound energy
6. Electric energy 7. Sound
8. the vibration of bodies.
9. sound. 10. potential – kinetic
11. sound – kinetic – heat
12. kinetic – sound 13. kinetic – heat
14. Kinetic – sound 15. Kinetic – electric
16. light 17. electric – kinetic
18. kinetic
19. electric fan – washing machine.
20. electric 21. light – heat
22. electric
23. chemical – electric 24. solar cells.

6. 1. Because sound is produced from the vibration of objects.
2. Because the kinetic energy of the wheel changes by the dynamo into electric energy that changes into light energy through the lamp of the bicycle.
3. Because the kinetic energy changes into heat energy.
4. Because by rotating the spring of the toy then leave it, the stored potential energy changes into kinetic energy.
5. Because the kinetic energy changes into heat energy.
6. To change the kinetic energy of the wheel into electric energy.
7. Because the electric energy changes into kinetic energy in the fan's motor.
8. Because :
- It provides the satellites with electric energy to operate their equipment.
- It changes the light energy into electric energy that is used in houses.
9. Because the solar cells provide the satellites with electric energy to operate their equipment.
10. Due to the change of kinetic energy into heat energy.

7. 1. The paper will be heated up and it may burn if it is exposed to the Sun rays for a long period of time.
2. A sound is produced due to the vibration of the piece of rubber band.
3. A sound is produced due to the vibration of the two prongs of the tuning fork.
4. By pulling the free end of a vertically hanged spring, the kinetic energy changes into potential energy and on leaving it free the potential energy changes into kinetic energy.
5. You feel warm because the kinetic energy changes to heat energy.
6. The nail becomes hot, because the kinetic energy changes into heat energy.
7. The lamp will light because the electric energy changes into light energy.
8. The electric fan rotates due to the change of electric energy into kinetic energy.
9. It changes light (solar) energy into electric energy.

8. 1. Electric energy. 2. Sound energy.
3. Light energy. 4. Potential energy.
5. Sound energy. 6. Heat energy.
7. Kinetic energy. 8. Heat energy.
9. Electric energy. 10. Sound energy.
11. Potential energy. 12. Kinetic energy.

9. 1. Kinetic energy ➡ Light energy.
2. Electric energy ➡ Sound energy.
3. Electric energy ➡ Kinetic energy.
4. Electric energy ➡ Kinetic energy.
5. Electric energy ➡ Light energy.
6. Kinetic energy ➡ Sound energy.
7. Light energy ➡ Heat energy.

10. 1. The potential energy. 2. Spring (B).

11. 1. It is the ability to do work.
2. It is a form of energy that reaches ear causing hearing.

12. 1. It is used to change the kinetic energy into electric energy.
2. It is used to change the electric energy into kinetic energy.
3. It is used to change the light energy into electric energy.

13. 1. e 2. d 3. a 4. c
5. f 6. g 7. b

Timss Questions

1. • On rotating the spring of the toy :
- You do work in the form of kinetic energy.
- This kinetic energy changes into potential energy in the spring.
• On leaving the spring, the stored potential energy changes into kinetic energy causing the motion of the car.

2. 1. Potential energy.
2. The spring (B) stores more potential energy.
3. The two springs will return back to their normal positions.

3. kinetic – sound energy – the vibration

4. 1. dynamo – kinetic – electric
2. increases

Lesson 2

1. 1. d. static and current electricity.
2. b. rubbing your hair by a plastic ruler.
3. a. static electricity.
4. d. all the previous answers.
5. a. the formation of electric charges on the balloon.
6. a. Current electricity
7. d. all the previous answers.
8. d. (a) and (b). 9. b. The battery
10. c. electric circuit.

2. 1. (×) The two types of electricity are static electricity and current electricity.
2. (✓) 3. (✓)
4. (×) The static electricity can be ....
5. (×) The battery is the source ....
6. (✓)
7. (×) .... in one direction.
8. (×) .... to close and open the electric circuit.
9. (×) A battery, connecting wires, lamp and electric switch are the components ....
10. (✓) 11. (✓)

3. 1. Static electricity
2. static electricity.
3. Current electricity
4. electric charges
5. direct current. 6. battery
7. connecting wires.
8. electricity. 9. turn off

4. 1. Static electricity. 2. Static electricity.
3. Static electricity.
4. Current (Dynamic) electricity.
5. Direct current. 6. Electric circuit.
7. Electric circuit. 8. Battery.
9. The electric switch (key).
10. Connecting wires.
11. Connecting wires.

5. 1. Electricity
2. static electricity – current (dynamic) electricity.
3. Static electricity
4. static electricity.
5. static electricity. 6. Rubbing
7. electric charges
8. static electricity. 9. current (dynamic)
10. Direct current 11. an electric circuit.
12. electric switch – battery
13. The electric circuit
14. battery
15. The electric switch (key)
16. connecting wires
17. electric current – the battery
18. electricity.

6. 1. Due to the formation of the electric charges on the plastic comb during rubbing it by your hair.
2. Due to the formation of the electric charges on the ruler causing the attraction of paper bits.
3. Because during rubbing the balloon, electric charges are formed on its surface causing its attraction to the wall.
4. Due to the formation of electric charges when parts of your body are rubbed by the clothes during motion.
5. Because rubbing objects generates electric charges (static electricity) on the object.
6. Because it is the source of the electric current.
7. Because the electric current of homes has high power that may cause death.
8. Because it is from the clean forms of energy that used to operate many home equipments.
9. To control the opening and the closing of the electric circuit.

7. 1. Your hair will stand and attract to the comb.
2. The small bits of paper will be attracted to the rubbed ruler.
3. We can't operate many electric equipment as television, washing machine, computer and refrigerator.
4. Some electric charges are formed on it.
5. Your hair will be attracted to the charged inflated balloon.
6. The lamp will not light.
7. The charged balloon will be attracted to the wall.
8. We cannot control the closing and the openning of the electric circuit.

8. Use the solar cells to produce electricity from the solar energy.

9. 1. It is a type of electricity that is formed from electric charges that remain on an object.
2. It is the electric charges that flow through connecting wires for long distances forming the electric current.
3. It is the closed path of the electric current.

10. 1. It is the source of the electric current in the electric circuit.
2. – They are used to transfer the electric current from battery to lamp.
– They are used to connect all the circuit components together.
3. It is used to close and open the electric circuit.

11. Look at the main book on page (131).

12. 1. Electric lamp.
Its function : Source of light.
2. Electric switch.
Its function : close and open the circuit.
3. Connecting wires.
Their function :
– Connect all the circuit components together.
– Transfer the electric current from the battery to lamp.
4. Battery.
Its function : Source of the electric current in the electric circuit.

Timss Questions

1. A. b. (1) , (2) and (4).
B. d. (3) and (5).

2. 1. (b).
2. (a) .
3. (b) , (c) , (d) and (e).
4. (e).
5. (c).

3. 1. electric charges – attracts
2. static electricity.

PART 2

Guide Answers of Worksheets



Worksheet 1

1. 1. Urinary
2. Salivary glands – liver – pancreas
3. Saliva – starch – sugar.
4. 32
5. digestive enzymes – starch.

2. 1. Tongue. 2. Digestion process.
3. Circulatory system.
4. Molars. 5. The cell.

3. (A) 1. b 2. d 3. e 4. f

(B) 1. Grinding food to make its swallowing easy.
2. It digests (changes) starch into sugar.
3. It gives us the ability to feel, hear, smell and taste.

4. (A) 1. Starch will not change (digest) into sugar in the mouth.
2. The body cannot get rid of its harmful substances, so it will be poisonous.

(B) ① Mouth. ② Pharynx.
③ Esophagus. ④ Stomach.
⑤ Small intestine. ⑥ Large intestine.

5. (A) 1. Because saliva which is produced by the salivary glands in mouth changes starch in bread into sugar.
2. To let the body benefits from them.
3. To perform different functions as cutting, tearing and grinding of food.

(B) Mouth – Pharynx – Esophagus – Stomach – Small intestine – Large intestine.

Worksheet 2

1. 1. Stomach. 2. Ileum.
3. Rectum. 4. Gastric juice.
5. Pharynx.

2. 1. stomach – small intestine.
2. Pancreatic juice – bile juice
3. bile juice – gastric juice.
4. digestion process – absorption process.
5. Duodenum – pancreatic

3. (A) 1. Because it contains large amounts of fats.
2. Because in the small intestine :
– The complete digestion of different types of food occurs.
– Absorption of digested food occurs.
3. Because it secretes the bile juice which changes (digests) fats into fatty emulsion.

(B) – Ileum secretes intestinal juice.
– Liver secretes bile juice.

4. (A) 1. ① Esophagus.
② Stomach.
2. It allows food to pass from pharynx to stomach.
3. Gastric juice.

(B) They are digestive substances that digest food and convert it into simple substances.

(C) The absorption process of the digested food doesn't occur.

5. 1. c. Esophagus 2. a. Stomach
3. d. Small intestine 4. a. small intestine.
5. b. buy food from street sellers.

Worksheet 3

1. 1. Respiration process.
2. Nose. 3. Oxygen gas.
4. Trachea. 5. Diaphragm.

2. (A) 1. – It is lined with mucous layer and hairs to filter the air from dust and microbes before entering the lungs.
– It is lined with blood capillaries to warm air before entering the lungs.

2. It closes the larynx or trachea during swallowing to prevent food from entering the trachea.
3. They eject up the strange objects that enter the trachea.

(B) 1. Due to the presence of epiglottis that closes the trachea during swallowing.
2. Because it gives the body of the living organism the needed energy to do all the body activities.

3. 1. a. oxygen 2. d. cilia.
3. c. pharynx. 4. a. liver.
5. b. Alveoli

4. 1. ① Trachea. ② Two bronchi.
③ Bronchioles. ④ Alveoli.
⑤ Diaphragm.
2. Exchanging of gases takes place in them.
3. It is a process by which a human obtains energy from burning of the digested food.

5. (A) 1. The exchange of gases doesn't occur.
2. The air will enter the two lungs carrying dust and microbes and this will cause diseases.

(B) 1. Diaphragm 2. Trachea
3. The respiratory system – pharynx

Worksheet 4

1. 1. b. exhalation process.
2. b. very thin
3. c. inhalation process.
4. b. Diaphragm
5. c. being in crowded places.

2. (A) 1. To obtain more energy needed for all the body activities.
2. To keep the respiratory system healthy as they contain vitamin "C".
3. To allow the exchange of gases between them.

(B) 1. Avoid being in crowded or poor ventilation places.
2. Keep off the severe cold.
3. Eat fruits rich in vitamin "C" such as orange and guava to protect yourself from cold.
4. Stop smoking or being a passive smoker.

3. 1. Inhalation – exhalation.
2. inhalation – move upwards.
3. carbon dioxide – oxygen – alveoli.
4. increases
5. bronchioles – alveoli.

4. 1. Exhaled air. 2. Alveoli.
3. Inhalation process.
4. Exhalation process. 5. Diaphragm.

5. (A) Nose ⟶ Pharynx ⟶
Larynx ⟶ Trachea ⟶
Bronchus ⟶ Alveoli ⟶
Blood.

(B) Exhaled air contains carbon dioxide gas.

Worksheet 5

1. 1. a. esophagus.
2. c. larynx
3. c. rectum.
4. d. thin walls.
5. c. running

2. 1. Abdominal cavity.
2. Anus.
3. Absorption process.
4. Trachea.
5. Mucous layer and hairs.

3. 1. (✗) .... cartilaginous rings.
2. (✗) .... carbon dioxide gas.
3. (✗) .... more active.
4. (✓)
5. (✗) .... vitamin (C) to protect yourself from cold.

4. (A) 1. Liver. 2. Pancreas.
3. Duodenum. 4. Ileum.
5. Rectum. 6. Anus.



(B) It stops secreting bile juice, so fats can't be digested.

5. (A) 1. It carries out the transport function, where it distributes the digested food and oxygen gas all over the body cells.
2. It is used to detect the presence of carbon dioxide gas.

(B)

Points of comparison	Gastric juice	Saliva	Bile juice
It is secreted by :	Stomach.	Salivary glands.	Liver.
Its function :	Makes incomplete digestion of protein.	Contains digestive enzymes that change starch into simple substances called sugar.	Helps in digestion of fats as it changes fats into fatty emulsion.

Worksheet 6

1. 1. systems – organs. 2. similar cells.
3. building unit
4. structure – function
5. Cell wall – chloroplasts

2. (A) 1. Because chloroplasts are responsible for making the food of plants by the photosynthesis process.
2. Because it organizes the biological operations in the cell and it is responsible for the cell division.
3. To keep the human body alive.

(B) 1. All the biological operations of the cell occur in it.
2. It controls the substances that enter or leave the cell.

3. (A) 1. (✗) 2. (✓)
3. (✗) 4. (✓)

(B) 1. The cell can't control the substances that enter or leave it.
2. Carbon dioxide gas is produced.
3. The green plant leaves become yellow and die as they can't make their food by photosynthesis process.

4. (A) 1. c. Chloroplast 2. b. Yeast fungus
3. c. sugar

(B)

Points of comparison	Animal cell	Plant cell
Cell wall	Absent	Present
Plasma membrane	Present	Present
Nucleus	Present	Present
Cytoplasm	Present	Present
Chloroplasts	Absent	Present

5. (A) 1. Yeast fungus.
2. ① Vacuole. ② Cell wall.
③ Nucleus. ④ Cytoplasm.
– The function of number ④ :
All the biological operations of the cell occur in it.

(B) 1. Cytoplasm. 2. Yeast fungus.
3. The unicellular living organism.

Worksheet 7

1. 1. The body.
2. Unicellular living organisms.
3. Chloroplasts.
4. Cilia.
5. Photosynthesis.

2. 1. (✗) .... is 9 - 10 metres.
2. (✗) .... is 32.
3. (✗) .... in the rectum.
4. (✗) Carbon dioxide gas and water vapour leave ....
5. (✓)

3. (A) 1. c 2. d 3. e
4. a 5. f 6. b

(B) 1. It is a process by which the air rich in oxygen gas enters the lungs through the nasal cavity.

2. It is a process by which the air rich in carbon dioxide gas and water vapour is expelled out of the lungs through the nasal cavity.

4. (A) 1. ⓐ Incisors. ⓑ Canines. ⓒ Molars.

2. **Function of ⓐ** : They cut and tear food into small pieces.
Function of ⓑ : They cut and tear food into small pieces.
Function of ⓒ : They grind food to make its swallowing easy.

(B) 1. alcohol. 2. carbon dioxide gas.

5. (A) 1. Because the respiratory system consists of a group of organs.
2. Because the body of a unicellular organism consists of only one cell, so we can't see it by naked eyes.
3. Because it has the ability to do all the biological functions.

(B) 1. Yeast fungus. 2. Animal cell. 3. Plant cell.

Worksheet 8

1. 1. sunlight – mineral salts.
2. Carbon dioxide – oxygen
3. producers – decomposers.
4. producers – consumers – decomposers.
5. organic wastes.

2. (A) 1. (✗) 2. (✓) 3.(✓) 4. (✗)

(B) 1. Because they increase the soil fertility, used in a lot of industries and help us get rid of dead bodies of organisms.
2. Because they make their own food by themselves through the photosynthesis process.
3. Because the green plants absorb carbon dioxide gas and released oxygen gas in photosynthesis process.

3. (A) – Producers : Orange tree – Green algae.
– Consumers : Lion – Wild cat – Zebra – Human.
– Decomposers : Yeast fungus – Yoghurt bacteria.

(B)

Points of comparison	Producers	Consumers	Decomposers
1. Definition :	They are living organisms that can make their own food by themselves through the photosynthesis process.	They are living organisms that depend on producers directly or indirectly to get their food.	They are living organisms that get their food by decomposing the organic wastes as dead bodies, plant remains and decayed food.
2. Examples :	– Green plants. – Green algae. – Some types of bacteria.	– Cows, sheep, chicken and human that feed on producers. – Lion, hawk, tiger and human that feed on consumers.	– Some types of bacteria as yoghurt bacteria. – Some types of fungi as bread mold fungus and yeast fungus.

4. 1. The green leaves. 2. Producers.
3. Decomposers. 4. Iodine solution.
5. Oxygen gas.

5. (A) 1. The green plants can't make their own food and will die.
2. Their green leaves become yellow and weak.

(B) 1. oxygen gas. 2. Producers

(C) 1. Green plants. 2. Green algae.
3. Some types of bacteria.

General Exercise of the School Book on Unit 1

1. 1. oxygen - carbon dioxide
2. organs - tissues - cells
3. stomach - ileum.
4. decomposers.
5. Bile juice - pancreatic juice
6. Yeast fungus

2. 1. d. alveoli.
2. c. carbon dioxide
3. c. large intestine.
4. c. lung
5. a. digestive

3. 1. ①
2. It secretes bile juice that helps in the digestion of fats and it converts fats into fatty emulsion.
3. ⑦ The small intestine (ileum).

4. Look at the main book on page (42).

5.

Points of comparison	Animal cell	Plant cell
• Chloroplasts.	Absent	Present
• Cell wall.	Absent	Present

6. • Salivary glands secrete saliva liquid.
• Liver secretes bile juice.

7. 1. The cell. 2. Saliva.
3. Bile juice. 4. Chloroplasts.
5. Producers.

8. 1. The corn plant cells can't make their own food.
2. The soil fertility decreases and the dead bodies of organisms will remain in nature that cause many diseases.
3. Food can't be completely digested and also can't be absorbed, so the human can't get benefit from food.
4. Some food particles or water will enter the trachea during swallowing.
5. Dust and microbes will enter the respiratory system.

Model Exam 1 on Unit 1

1. 1. liver – pancreas
2. oxygen – sugar or starch.
3. hairs – mucous layer 4. plant cells.
5. 32 6. down – up

2. (A) 1. a. tongue. 2. c. (a) and (b).
3. d. bread mold fungus.

(B) It closes larynx or trachea during swallowing to prevent food from entering the trachea.

(C) Yeast fungus is used in making bread and alcohol.

3. 1. Organ. 2. Ileum.
3. Chloroplasts. 4. Consumers.
5. Light energy.

4. (A) 1. (✗) 2. (✓) 3. (✗)
4. (✗) 5. (✓) 6. (✓)

(B) 1. Food can't be completely digested and also can't be absorbed, so human can't get benefits from food.
2. The diaphragm moves up and the chest cavity becomes narrow, so the air rich in carbon dioxide gas comes out of the two lungs through the nose by exhalation process.

5. (A) 1. Because its colour turns into blue in the presence of starch.
2. Because it helps in digestion of fats as it converts fats into fatty emulsion.

(B) b. keep one plate in a light place and the other one in a dark place.

Model Exam 2 on Unit 1

1. 1. c. decomposers. 2. c. decomposers.
3. b. consumers. 4. b. Cell wall
5. d. all the pervious answers.

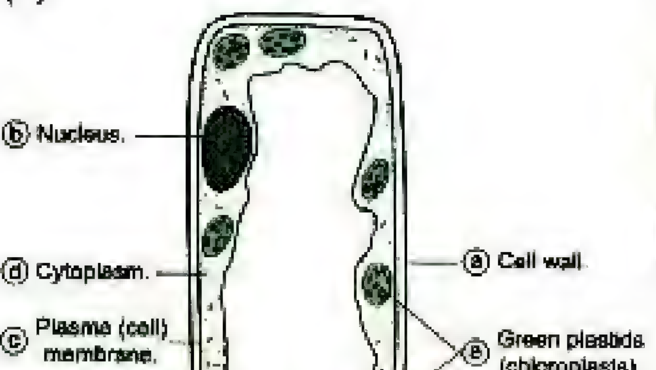
2. 1. living organisms – animals – non-living things – water.
2. food
3. oxygen – carbon dioxide
4. digestion – absorption.
5. decomposer.

3. 1. d 2. c 3. e
4. a 5. f 6. b

4. 1. (✗) .... starts with the duodenum .... ileum.
2. (✗) .... thoracic cavity.
3. (✓)
4. (✗) .... respiration process.
5. (✓)

5. (A) 1. soil. 2. Iodine solution
3. Bread mold fungus 4. cell
5. Carbon dioxide

(B)



Worksheet 9

1. 1. the sound 2. work.
3. Light energy 4. Electric energy
5. Kinetic energy

2. 1. b. potential 2. b. increases.
3. a. rest. 4. b. motion
5. b. vibration

3. (A) 1. vibrates – sound. 2. vibration
3. the sound.
(B) 1. Potential energy. 2. Light energy.
3. Kinetic energy.

4. 1. Potential energy.
2. Chemical energy.
3. Sound energy.
4. Kinetic energy.
5. Electric energy.

5. (A) 1. b 2. c 3. a
4. f 5. d 6. e

(B) Because the stored potential energy changes into kinetic energy that causes the motion of the car.

Worksheet 10

1. 1. c. heat 2. a. sound.
3. d. (a) and (c). 4. a. electric – kinetic
5. a. solar cells.

2. (A) 1. Electric energy changes into sound energy.
2. (a) Electric energy changes into light energy.
(b) Electric energy changes into sound energy.
3. Light (solar) energy changes into electric energy.
(B) 1. light – heat
2. heat up – may burn.

3. 1. sound energy – heat energy.
2. chemical – electric 3. electric – light
4. solar cells – solar heater.
5. Kinetic – sound

4. (A) 1. Because the electric energy changes into kinetic energy.
2. Due to increasing the kinetic energy produced from moving tires, that changes into more electric energy produced from the dynamo, that causes increasing in the light of the bicycle lamp.
(B) – It provides the satellites with electric energy to operate their pieces of equipment.
– It changes the light (solar) energy into electric energy that is used in homes.

5. 1. In the toy operated by batteries, chemical energy changes into electric energy to operate the motor, while that operated by a spring, potential energy changes into kinetic energy.
2. Electric heater changes electric energy into heat energy, while solar heater changes light energy into heat energy.
3. In violin, kinetic energy changes into sound energy, but in radio, electric energy is changed into sound energy.

4. Dynamo changes kinetic energy into electric energy, while solar cell changes light (solar) energy into electric energy.

Worksheet 11

1. 1. two – static electricity – current (dynamic) electricity.
2. lightning – hair – the static
3. The battery
4. electric circuit
5. Current (dynamic) electricity – current.

2. 1. (✗) .... related to the static electricity.
2. (✓)
3. (✗) .... of the electric current.
4. (✗) .... the direct electric current.
5. (✗) .... through a closed circuit.

3. (A) 1. To decrease (rationalize) the consumption of electricity.
2. Because the battery is the source of the electric current in the electric circuit.
3. Because rubbing of objects causes the formation of the electric charges on the surface of the rubbed objects.
(B) 1. Direct current.
2. The electric switch.

4. 1. d. remain 2. b. static electricity.
3. c. attracts 4. d. Lightning
5. c. current

5. 1. We cannot close and open the electric circuit.
2. The lamp will not light.
3. – **Function of (b) :** is used to close and open the electric circuit.
– **Function of (c) :** is the source of the electric current.
– **Function of (d) :** used to connect all the circuit components together and transfer the electric current from the battery to lamp.

General Exercise of the School Book on unit 2

1. 1. (✓)
2. (✓)
3. (✓)

2. 1. Heat energy.
2. Sound energy.
3. Kinetic energy.
4. Potential energy.
5. Sound energy.
6. Light energy.

3. 1. vibration of objects.
2. work.
3. electric

4. 1. Due to the formation of the electric charges on the ruler causing the attraction of paper bits.
2. Because sound is produced from the vibration of objects.
3. Dynamo changes kinetic energy into electric energy and the lamp changes electric energy of dynamo into light energy.

5. 1. It is a type of electricity that is formed from electric charges that remain on an object.
2. It is the electric charges that flow through connecting wires for long distances forming the electric current.
3. It is a form of energy that reaches ear causing hearing.

6. 1. We can't operate many electric equipment as television, washing machine, computer and refrigerator.
2. The small bits of paper will be attracted to the rubbed ruler.
3. By pulling the free end of a vertically hanged spring the kinetic energy changes into potential energy and on leaving it free the potential energy changes into kinetic energy.

7. ① Electric lamp.
Its function : The source of light.
② Electric switch.
Its function : Open and close the electric circuit.
③ Connecting wires.
Their function : Connect all the circuit components together and transfer the electric current from the battery to lamp.
④ Batteries.
Their function : The source of electric current.

Model Exam ① on Unit ②

1. 1. d. (a) , (b) and (c)
2. b. the electric current does not flow.
3. b. transfer the electric current.
4. b. light
5. d. all the previous answers.

2. 1. light – kinetic – sound
2. electric charges – positive – negative
3. Static electricity 4. closed.
5. chemical – electric

3. (A) 1. (✗) 2. (✓)
3. (✗) 4. (✓)
(B) It is used to change solar (light) energy into heat energy.

4. (A) 1. Solar energy. 2. Sound energy.
3. Connecting wires. 4. Electricity.
(B) Due to the vibration of its two prongs.

5.

Heat energy	Light energy	Kinetic energy	Sound energy	Electric energy
- Solar heater. - Rubbing your hands. - Hammering a piece of iron	- The electric lamp.	- Electric mixer.	- Radio. - Guitar.	- Battery. - Solar cells. - Dynamo.

Model Exam ② on Unit ②

1. 1. current (dynamic)
2. electric lamp – the Sun.
3. work. 4. piano – radio.
5. dynamo – guitar 6. potential – kinetic

2. (A) 1. Battery.
2. The electric circuit.
3. The connecting wires.
(B) 1. Sound energy. 2. Heat energy.
3. Kinetic energy. 4. Heat energy.

3. (A) 1. d 2. c
3. b 4. a
(B) Rub the balloon by a piece of wool then get the balloon close to the powdered sugar, the electric charges are formed on its surface, so it attracts the powdered sugar.

4. (A) 1. (✗) 2. (✓)
3. (✗)
(B) 1. solar energy.
2. Dynamic (current)

5. (A) 1. To decreas (rationalize) the consumption of electricity.
2. Because it is from the clean forms of energy that used to operate many home equipment.
(B) 1. a. kinetic energy changes into sound energy.
2. b. light energy changes into electric energy.
3. a. light energy.

PART 3

Guide Answers of Final Examinations 2019



Cairo Governorate

1 Patriarchal College

1. (A) 1. Green plant – bacteria
2. the vibration
3. stomach – small intestine.
4. work.

(B) 1. It controls the substances that enter or leave the cell.
2. It changes light (solar) energy into electric energy, that is used in houses.
3. It closes larynx or trachea during swallowing to prevent food from entering the trachea.

2. (A) 1. To help the body in obtaining more energy.
2. Because it is used in making bread and alcohol.
3. Because they depend on themselves to make their own food by photosynthesis process.

(B) 1. Chemical energy.
2. Consumers.
3. Diaphragm.

3. (A) 1. The paper will be heated up and it may burn if it is exposed to the Sun rays for a long period of time.
2. The soil fertility decreases and the dead bodies of organisms will remain in nature that causes many diseases.

(B) 1. d. (a) and (c) are correct.
2. b. chloroplasts.
3. b. oxygen
4. a. rectum.

4. (A)

Motor	Dynamo
It changes electric energy into kinetic energy.	It changes kinetic energy into electric energy.

(B) 1. (✗) .... in mouth.
2. (✗) The plant cell is ....
3. (✓)
4. (✗) .... warm the air.

Additional questions

1. Due to formation of the electric charges on the ruler causing the attraction of paper bits.
2. Because during rubbing the balloon, electric charges are formed on its surface causing its attraction to the wall.
3. Because the electric current of homes has high power that may cause death.

2 East Nasr City Educational Zone

1. 1. Energy. 2. Cell.
3. Consumers. 4. Gastric juice.
5. Tongue. 6. Light energy.

2. (A) 1. alveoli. 2. consumers.
3. oxygen 4. Plasma membrane

(B)

	Used energy	Produced energy
1. Electric fan.	Electric	Kinetic
2. Rubbing hands.	Kinetic	Heat

3. 1. liver – pancreas.
2. digestive – respiratory
3. chemical – electric
4. potential energy – light energy
5. inhalation – exhalation
6. cell wall – chloroplasts.

4. (A) 1. b. saliva. 2. b. Fungi
3. a. large intestine. 4. b. Sound

(B) 1. Because the kinetic energy changes into heat energy.
2. To eject up strange objects as dust.

Additional questions

1. Your hair will stand and attract to the comb.
2. The small bits of paper will be attracted to the rubbed ruler.
3. Some electric charges are formed on it.

3 Notre Dame Des Apotres School

1. 1. Cell wall – chloroplasts
2. duodenum – ileum.
3. down – up
4. starch – oxygen gas.



5. chemical – electric
6. Green plant – hawk

2. (A) 1. Decomposers.
2. The digestion process. 3. Energy.
4. Photosynthesis process.
5. Sound energy.
6. The inhalation process.

(B) 1. It breaks down complex food into simple substances to let the body gets their benefits.
2. Exchange of gases occurs in them.
3. It is used in making bread and alcohol.

3. (A) 1. mouth. 2. Electric fan
3. Cytoplasm 4. Exhaled
5. 32. 6. cells.

(B) 1. Because the kinetic energy changes into heat energy.
2. To filter the air from dust and microbes before entering the two lungs.
3. Because it secretes bile juice that changes fats into fatty emulsion.

4. (A) 1. a. Diaphragm 2. b. pharynx.
3. c. decomposers. 4. c. small intestine.
5. b. heat 6. b. Esophagus

(B) 1. The food cannot be mixed well with saliva and also we cannot taste the food.
2. The paper will be heated up and it may burn if it is exposed to the Sun rays for a long period of time.
3. Some food particles or water will enter the trachea during swallowing.

Additional questions

1. We can't operate many electric equipment as television, washing machine, computer and refrigerator.
2. Your hair will be attracted to the charged inflated balloon.
3. The lamp will not light.

4 Manor House International Schools

1. 1. gastric juice – proteins.
2. plastids 3. inhalation
4. Trachea 5. Digestion

2. 1. Sound energy. 2. Yeast fungus.
3. Carbon dioxide gas. 4. Alveolus.
5. Tongue. 6. The Sun.

3. (A) 1. c. tongue. 2. b. green parts
3. a. Cow 4. b. sound
5. d. (a) and (b).

(B) 1. Bile juice 2. cells.
3. small intestine.

4. (A) 1. To keep it permanently open.
2. To keep the respiratory system healthy.
3. Because it contains large amounts of fats.

(B)

Points of comparison	Plant cell	Animal cell	Yeast fungus
Nucleus	Present	Present	Present
Chloroplasts	Present	Absent	Absent

Additional questions

(A) • Using the solar cells to produce electricity from the solar energy.
• Turning off the lamps when leaving a place.
• Turning off all the unused equipment.

(B) It is a type of electricity that is formed from electric charges that remain on an object.

5 Saint Paul College

1. (A) 1. cell wall – plasma membrane.
2. carbon dioxide – oxygen
3. gastric – pancreatic
4. light – electric

(B) 1. It organizes the biological operations in the cell and it is responsible for the cell division.
2. It secretes bile juice in the small intestine (duodenum).

2. (A) 1. Photosynthesis process.
2. The Sun. 3. Trachea.
4. Plasma membrane.

(B) 1. Feel warm because kinetic energy changes into heat energy.
2. Some food particles or water will enter the trachea during swallowing.

3. (A) 1. To filter the air from dust and microbes before entering the two lungs.

2. Because they don't make their own food, but they depend on consumers that previously fed on producers to get their food.
3. To keep it permanently open.

(B) ⓐ Trachea. ⓑ Diaphragm.
ⓒ Two lungs.

4. (A) 1. b. potential. 2. c. large intestine.

(B) 1. It is the ability to do work.
2. It is the building unit of the living organism's body.

(C) Sunlight, chloroplasts, carbon dioxide gas, water and mineral salts.

Additional questions

(A) 1. It is the electric charges that flow through connecting wires for long distances forming the electric current.
2. It is the closed path of the electric current.

(B) 1. It is used as a source of electric current in the electric circuits.
2. They are used to connect all the circuit components together.

6 Basateen & Dar El-Salam Educational Administration

1. (A) 1. b. small intestine.
2. d. all the previous.
3. c. yeast fungus.

(B) 1. Organs– Cells.
2. a. Sunlight.
b. Oxygen gas.

(C) 1. It is used in making bread and alcohol.
2. It is the a voice box in human.

2. (A) 1. The cell. 2. Energy.
3. The Sun. 4. Molars.

(B) (a) 1. stomach. 2. digestive
3. gastric – proteins.

(b) 1. lung. 2. respiratory
3. alveoli – exchange.

(C) 1. Villi. 2. Lamp.

3. (A) 1. The clear limewater becomes turbid (milky).
2. Feel warm, because kinetic energy changes into heat energy.

(B)

	Used energy	Produced energy
1. Lamp	Electric	Light
2. Fan	Electric	Kinetic
3. Electric heater	Electric	Heat
4. Radio	Electric	Sound

(C) 1. True. 2. True.
3. False. 4. True.

4. (A) 1. To filter the air from dust and microbes before entering the two lungs.
2. Because sound is produced from the vibration of objects.

(B)

	Animal cell	Plant cell
1. Cell wall	Absent	Present
2. Chloroplast	Absent	Present
3. Nucleus	Present	Present
4. Sap vacuole	Absent	Present

(C) 1. Decomposer. 2. Producer.
3. Consumer. 4. Consumer.

Additional questions

Points of comparison	Static electricity	Dynamic electricity (Current electricity)
Definition :	It is the type of electricity that is formed from electric charges that remain on an object.	It is the electric charges that flow through connecting wires for long distances forming electric current.
Method of generation :	Rubbing.	Electric circuit.
Example :	Vision of lightning in the sky.	The current that is used to operate heater, refrigerator, television and computer.



7 El-Gomhouria Language School

1. (A) 1. sugar – oxygen gas.
2. gastric juice – proteins.
3. kinetic – electric
4. liver – pancreas.

(B) ① Trachea.
② Lung.
③ Diaphragm.
④ Bronchus.

2. (A) 1. Energy. 2. Ileum.
3. Alveoli. 4. Potential energy.
5. Pharynx.
6. Respiration process.

(B) 1. Because it secretes bile juice that changes fats into fatty emulsion.
2. Because the kinetic energy changes into heat energy.
3. To warm air before entering the lungs.

3. (A) 1. b. iodine solution. 2. c. large intestine.
3. b. sensation. 4. b. Sound

(B) 1. Hear a sound, because sound is produced from the vibration of objects.
2. The chest cavity enlarges and the air rich in oxygen gas enters the two lungs through nose, the inhalation process occurs.

(C) 1. It provides the satellites with electric energy to operate their pieces of equipment.
2. It is used in making bread and alcohol.

4. (A) 1. Nucleus 2. molars.
3. Epiglottis 4. heat

(B) 1. Light energy 2. Kinetic energy

(C)

Points of comparison	Plant cell	Animal cell
1. Chloroplasts	Present	Absent
2. Nucleus	Present	Present
3. Cell wall	Present	Absent

Additional questions

(A) 1. (✓) 2. (✗)

(B) It is the closed path of the electric current.

Giza Governorate

8 Beverly Hills Language School

1. (A) 1. producers – consumers – decomposers.
2. clear limewater. 3. alveoli.
4. Photosynthesis 5. mouth.
6. kinetic 7. Oxygen

(B) 1. a. stomach. 2. a. contracts
3. c. yeast fungus

2. (A) 1. (✓) 2. (✗) 3. (✓)
4. (✗) 5. (✓) 6. (✗)

(B) 1. Starch will not change into sugar in the mouth.
2. Oil and water are mixed together forming fatty emulsion.
3. All living organisms will die, because the plant is the main source of food and energy for all living organisms.

3. (A) 1. Absorption process.
2. Stomach. 3. Duodenum.
4. Decomposers. 5. Cytoplasm.
6. Plant cell.

(B)

Organ	Function
1. Rings in the trachea	Keep it permanently open for breathing.
2. Epiglottis	It closes larynx or trachea during swallowing to prevent food from entering the trachea.

4. 1. the nose is lined with :
- Hairs and mucous layer to filter the air from dust and microbes.
- Blood capillaries to warm the air before entering the lungs.

2. - They help us get rid of dead bodies of organisms and plant remains.
- They increase the soil fertility.
- They are used in a lot of industries.

3. it contains large amounts of fats.
4. to let the body benefits from it.

Additional questions

(A) 1. It is the closed path of the electric current.

(B) 1. d. (a) and (b). 2. b. The battery

9 Kerdasa Educational Zone

1. (A) 1. liver – pancreas. 2. sound
3. Two lungs
4. Cell wall – chloroplasts

(B)

Producers	Consumers	Decomposers
Green plants	Tiger	Yeast fungus
Green algae	Cow	Bread mold fungus

2. 1. The cell. 2. Stomach.
3. Energy. 4. Epiglottis.
5. Producers. 6. Saliva.

3. 1. c. Alveoli 2. c. Decomposer
3. c. Tongue 4. c. Sound
5. a. three 6. a. hairs and mucous

4. (A) 1. digestive 2. Diaphragm
3. electric

(B) 1. d 2. a 3. b

Additional questions

(A) 1. d. static and current electricity.
2. b. rubbing your hair by a plastic ruler.

(B) The charged balloon will be attracted to the wall.

10 October Educational Zone

1. (A) 1. mouth – anus.
2. inhalation – exhalation
3. oxygen – carbon dioxide

(B) 1. Stomach. 2. Fungus.
3. Pancreas.

2. (A) 1. (✓) 2. (✓) 3. (×)
4. (✓) 5. (✓)

(B) is lined with mucous layer – hairs to filter

3. 1. c. alveoli. 2. a. liver.
3. c. Larynx 4. b. tissue.
5. a. 16 6. b. consumer.

4. (A) 1. The cell. 2. Energy.
3. Tongue.

(B) 1. b 2. c 3. a

Additional questions

(A) We cannot close and open the electric circuit.

(B) 1. (×) 2. (✓)

Alexandria Governorate

11 El-Agamy Educational Zone

1. 1. digestive canal – digestive canal supplementaries.
2. mucous layer – microbes.
3. cell wall – chloroplasts.

2. (A) 1. b. stomach. 2. a. oxygen.
3. c. kinetic

(B) 1. Circulatory system.
2. Alveoli. 3. System.

3. (A) 1. (✓) 2. (×) 3. (×)

(B) 1. • They help us get rid of dead organisms and plant remains.
• They increase the soil fertility.
• They are used in a lot of industries.
2. Because they can make their own food by the photosynthesis process.

4. (A) 1. It controls the substances that enter or leave the cell.
2. It secretes bile juice in the small intestine.

(B) (a) animal cell.
(b) ① Plasma membrane.
② Nucleus.
③ Cytoplasm.

Additional questions

1. Current electricity
2. electric charges
3. direct current.



12 Brilliance Language School

1. 1. thoracic – abdominal
2. cell wall – chloroplasts.
3. bread – alcohol.
4. stomach – small intestine.
5. electric – light
6. mouth – anus.

2. (A) 1. (✓) 2. (×) 3. (×) 4. (×)

(B) 1. To filter the air from dust and microbes before entering the two lungs.
2. Because it leads to cancer causing death.

3. (A) 1. Digestion process.
2. The cell. 3. Photosynthesis.

(B) 1. c. 2. a 3. b

4. (A) 1. c. Nucleus 2. b. potential
3. a. Carbon dioxide 4. c. Larynx
5. a. 32 6. b. small intestine.

(B) 1. lungs. 2. Electric
3. Decomposers

Additional questions

(A) 1. Electricity
2. static electricity – current (dynamic) electricity.
3. Static electricity

(B) Due to the formation of electric charges when parts of your body are rubbed by the clothes during motion.

Qaliubya Governorate

13 Al Resala Language School

1. (A) 1. saliva – starch – sugar.
2. starch – oxygen gas.
3. Energy
4. decomposers – hawk
5. kinetic – heat
6. Cell wall – chloroplasts
7. stomach – small intestine.
8. water – mineral salts – carbon dioxide
9. Heat – electric – chemical

(B) ① Bronchioles. ② Trachea.
③ Lung. ④ Diaphragm.

2. (A) 1. (✓) 2. (×) 3. (✓)
4. (✓) 5. (×) 6. (×)

(B)

Producers	Consumers	Decomposers
Bean plant	Shark	Yoghurt bacteria
Green algae	Rat	Bread mold fungus

(C) Ⓐ Mouth. Ⓑ Esophagus.
Ⓒ Liver. Ⓓ Stomach.
Ⓔ Pancreas. Ⓕ Small intestine.

3. (A) 1. Heat energy. 2. Light energy.
3. Chloroplasts. 4. Liver.
5. Decomposers. 6. Inhalation process.

(B) 1. Due to the presence of green plastids that are responsible for making food by the photosynthesis process.
2. Because the exhaled air is rich in carbon dioxide gas and water vapour, while the inhaled air is rich in oxygen gas.

(C)

Example	The energy used
1. The radio.	Electric energy
2. The guitar.	Kinetic energy
3. The electric fan.	Electric energy
4. The solar cell.	Light energy

4. (A) 1. b. organ. 2. b. consumer.
3. a. cell wall. 4. b. respiration.
5. b. photosynthesis
6. b. sound energy.

(B) 1. Carbon dioxide gas
2. cells. 3. Epiglottis
4. plant cell 5. small intestine.
6. carbon dioxide gas.

(C) 1. c 2. d 3. b 4. a

(D) a. (A) b. (B)

Additional questions

(A) We cannot close and open the electric circuit.

(B) 1. (✓) 2. (×) 3. (×)

Sharkia Governorate

14 New Salhia Language School

1. (A) 1. mouth opening – anus opening.
2. heat – electric
3. cell wall – plasma membrane.
4. carbon dioxide – oxygen

(B) 1. To filter the air from dust and microbes before entering the two lungs.
2. Because it helps in the digestion of fats, where it changes fats into fatty emulsion.

2. (A) 1. The cell. 2. Producers.
3. Energy. 4. Tongue.
5. Sound energy. 6. Gastric juice.

(B) 1. It is used in making bread and alcohol.
2. They grind food to make its swallowing easy.
3. It closes larynx or trachea during swallowing to prevent food from entering the trachea.

3. (A) 1. a. respiratory 2. a. Cell wall
3. b. sound

(B) 1. alveoli. 2. duodenum.
3. carbon dioxide.

4. (A) 1. (✓) 2. (✗) 3. (✗)
4. (✓) 5. (✓) 6. (✓)

(B) 1. Plant. 2. Dog – Lion – Human
3. Bacteria – Fungi.

Additional questions

(A) ① Electric lamp. ② Electric switch.
③ Connecting wire. ④ Batteries.

(B) The source of the electric current.

Menofia Governorate

15 Shbien El-Koum Educational Zone

1. (A) 1. trachea – esophagus.
2. duodenum – ileum.
3. light – sound.
4. kinetic – electric

(B) 1. They secrete saliva liquid in the mouth that contains digestive enzymes that change starch into simple substances called sugar.
2. It secretes bile juice in the small intestine.

2. (A) 1. Producers. 2. Sound energy.
3. Energy. 4. Diaphragm

(B) 1. Because the nose is lined with :
- Hairs and mucous layer to filter the air from dust and microbes.
- Blood capillaries to warm the air before entering the lungs.
2. Because it is used in making bread and alcohol.

3. (A) 1. a. bread mold fungus.
2. b. electric. 3. a. chloroplasts.
4. a. oxygen

(B) 1. Some food particles or water will enter the trachea during swallowing.
2. The paper will be heated up and it may burn if it is exposed to the Sun rays for a long period of time.

4. (A) 1. (✓) 2. (✓) 3. (✓) 4. (✗)

(B) ① Esophagus. ② Stomach.
③ Pancreas. ④ Liver.

Additional questions

(A)

Points of comparison	Static electricity	Dynamic electricity (Current electricity)
Definition :	It is the type of electricity that is formed from electric charges that remain on an object.	It is the electric charges that flow through connecting wires for long distances forming electric current.
Example :	Vision of lightning in the sky.	The current that is used to operate computer and , refrigerator.

(B) 1. a. static electricity.
2. d. all the previous answers.

Gharbia Governorate

16 Gharbia Educational Directorate

1. (A) 1. mouth. 2. tissues.
3. potential 4. vibration

(B) 1. d 2. a
3. e 4. b

2. (A) 1. Energy. 2. Decomposers.
3. Nucleus. 4. Pharynx.

(B) 1. To let the body benefits from it.
2. Because the kinetic energy changes into heat energy.

3. (A) 1. b. circulatory 2. a. dry cell.
3. b. dynamo of bicycle.
4. d. ileum.

(B) 1. Epiglottis 2. consumers.
3. Yeast fungus 4. Solar cell

4. (A) 1. ① Nose. ② Trachea.
③ Two lungs. ④ Diaphragm.
2. hairs – mucous layer
3. incomplete cartilaginous rings.
4. alveoli

(B) 1. The electric fan rotates due to the change of electric energy into kinetic energy.
2. They can't make their own food, because chloroplasts absorb sunlight that is necessary for photosynthesis process.

Additional questions

(A) Because rubbing objects generates electric charges on the object.

(B) 1. battery 2. connecting wires.
3. dynamic electricity.

Dakahlia Governorate

17 Belqas Educational Zone

1. (A) 1. c. solar cells. 2. b. Lung
3. c. ileum. 4. d. alveoli.
5. c. Nucleus 6. c. Chemical

(B)

Producers	Consumers	Decomposers
Wheat plant	Human	Yeast fungus
Green algae	Lion	Bacteria

2. (A) 1. bile juice – duodenum
2. larynx – epiglottis
3. Sugar – oxygen
4. energy – vibration

(B) Blood → Alveoli → Trachea → Larynx → Pharynx → Nose.

3. (A) 1. electric 2. cells.
3. plasma membrane.
4. up. 5. 16 teeth. 6. starch.

(B) 1. Ⓐ Liver. Ⓑ Large intestine.
Ⓒ Stomach. Ⓓ Pancreas.
2. It stores wastes, then ejects them outside the body through anus.

4. (A) 1. Energy. 2. Pharynx.
3. Inhalation process.
4. Tongue. 5. Cilia. 6. The cell.

(B) 1. c 2. a
3. d 4. b

(C) Some food particles or water will enter the trachea during swallowing.

Additional questions

(A) 1. (✗) 2. (✗)

(B) 1. static electricity. 2. static electricity.

Ismailia Governorate

18 Science Inspectorate

1. (A) 1. small intestine. 2. alveoli.
3. potential energy. 4. Epiglottis

(B) 1. animal
2. ① Plasma membrane.
② Nucleus. ③ Cytoplasm.

(C) 1. anus. 2. 32
2. solar heater. 4. electric lamp

2. (A) 1. c. carbon dioxide 2. a. Diaphragm
3. b. dry cell. 4. c. plant

(B) 1. To warm air before entering the lungs.
2. Because sound is produced from the vibration of objects.

(C) 1. c 2. a 3. d 4. b

3. (A)

Points of comparison	Gastric juice	Saliva	Bile juice
Secreted by :	Stomach	Salivary glands	Liver
Its function :	It digests proteins incompletely and changes it into a semi-liquid substance.	It digests starch into sugar.	It digests fats and changes it into fatty emulsion.

(B) 1. Tissue.
2. Energy.
3. Inhalation process.
4. Plasma membrane.

(C) 1. Chew the food well.
2. Avoid having food that contains flavour additives

4. (A) ① Large intestine. ② Small intestine.
③ Rectum. ④ Anus.

(B)

Producer	Consumers	Decomposer
Green plant	Snake – Lion	Yeast fungus

(C) 1. Sound. 2. Heat.
3. Kinetic. 4. Electric.

Additional questions

(A) Because it is the source of the electric current.

(B) 1. Static electricity.
2. Current electricity.
3. Direct current.

Port Said Governorate

19 Port Said Integrated Language School

1. (A) 1. Energy
2. cell wall – plastids.
3. carbon dioxide gas
4. Bile 5. urinary

(B) 1. They are living organisms that can make their own food by themselves through the photosynthesis.
2. It is the building unit of the animal body.
3. It is a common cavity leads to the trachea and the esophagus.
4. It is a process of changing food from a complex form into simple substances to let the body benefits from them.

(C) 1. Chew the food well.
2. Avoid having food that contains flavour additives.

2. (A) 1. Small intestine.
2. Diaphragm. 3. Nucleus.
4. Oxygen gas. 5. Decomposers.

(B) 1. Light 2. Electric 3. Sound

(C) 1. Due to the presence of green plastids that are responsible for making food by the photosynthesis process.
2. To provide us with vitamin (C) that is necessary to keep the respiratory system healthy.

3. (A) 1. b. Heat energy 2. a. alveoli
3. b. starches 4. c. 2
5. b. Unicellular 6. a. Respiration
7. a. larynx. 8. b. rectum

(B) 1. It is responsible for tasting food.
2. To filter the air from dust and microbes before entering the two lungs.
3. It controls the substances that enter or leave the cell.
4. It gives us the ability to feel, see, hear, smell and taste.



4. (A)

Inhalation process	Exhalation process
It is a process by which air enters the two lungs.	It is a process by which air is expelled out of the two lungs.

(B) 1. decomposers. 2. consumers.
3. producers.

(C) a. ① Nucleus. ② Cell wall.
③ Plasma membrane.
④ Cytoplasm.
b. plant cell.

Additional questions

(A) 1. Rubbing
2. electric charges.

(B) Electric circuit.

Kafr El-Sheikh Governorate

20 Science Inspectorate

1. (A) 1. a. Motor of fan 2. b. Nucleus
3. b. three 4. c. Sound

(B) 1. Blood capillaries 2. light

2. (A) 1. Because it contains carbon dioxide gas.
2. Because decomposers decomposing them.

(B) 1. Pharynx. 2. Sunlight.
3. Animal cell. 4. Energy.

3. (A) 1. c 2. d
3. a 4. b

(B) 1. This will not keep our digestive system healthy.
2. This will keep our respiratory system healthy.

4. (A) 1. (×) 2. (✓) 3. (×) 4. (✓)

(B) weak – food.

Additional questions

(A) 1. current 2. Direct current
3. an electric circuit.

(B) Because it is from the clean forms of energy that operates many home equipment.

El-Beihera Governorate

21 Ismail El-Habrouk official Language School

1. (A) 1. cell wall – plasma membrane.
2. duodenum – ileum.
3. chemical – electric
4. inhalation process – exhalation process.

(B) 1. It secretes bile juice in the small intestine.
2. It is used in making bread and alcohol.

2. (A) 1. Rectum. 2. Nucleus.
3. Alveoli. 4. Carbon dioxide gas.

(B) 1. To eject up strange objects as dust.
2. Because the kinetic energy changes into heat energy.

3. (A) 1. b. sound
2. c. large intestine.
3. a. plasma membrane
4. a. Larynx

(B) 1. ⓐ Liver. ⓑ Stomach.
ⓒ Pancreas. ⓓ Gall bladder.
2. It secretes gastric juice that makes incomplete digestion of proteins.

4. (A) 1. work. 2. blue
3. cytoplasm. 4. anus.

(B) 1. Food can't be completely digested and also can't be absorbed, so the human can't get benefit from food.
2. They can't make their own food, because chloroplasts absorb sunlight that is necessary for photosynthesis process.

Additional questions

(A) 1. a. the formation of electric charges on the balloon.
2. a. Current electricity

(B) 1. (×) 2. (✓)

El-Menia Governorate

22 Deirmwas official Language School

1. 1. b. gastric 2. a. Diaphragm
3. c. Green plants 4. b. Chloroplast
5. b. piano 6. c. starch.

2. 1. (✓) 2. (✓) 3. (✓)
4. (✗) 5. (✗) 6. (✗)

3. **(A)** 1. Pharynx. 2. Energy.
3. Inhalation process
4. Kinetic energy.

(B) 1. Because it helps in the digestion of fats as it changes fats into fatty emulsion.
2. Due to the absence of chloroplasts.

4. **(A)** 1. plant.
2. ① Cell wall. ② Sap vacuole.
③ Plasma membrane

(B) 1. Dust and microbes will enter the respiratory system.
2. The soil fertility decreases and the dead bodies of organisms will remain in nature that causes many diseases.

Additional questions

(A) 1. The electric switch.
2. Connecting wires.
(B) battery

Qena Governorate

23 Qena Educational Directorate

1. **(A)** 1. The cell. 2. Energy.
3. Inhalation process.
4. Plasma membrane.

(B) ① Cell wall. ② Nucleus.
③ Vacuole. ④ Cytoplasm.

2. **(A)** 1. heat 2. blue
3. large 4. potential

(B) 1. To warm air before entering the lungs.
2. Because the kinetic energy changes into heat energy.

3. **(A)** 1. Diaphragm 2. electric
3. solar cells.
4. digestive – respiratory
5. sound – light

(B) 1. Root or Stem or Leave.
2. Salivary glands or Liver or Pancreas.

4. **(A)** 1. a. saliva. 2. b. alveoli.
3. c. chloroplast. 4. c. dry cell.

(B)

Producers	Consumers	Decomposer
Corn plant	Human – Lion	Yoghurt bacteria

Additional questions

(A) 1. the electric circuit
2. battery
(B) d. all the previous answers.

Luxor Governorate

24 Luxor Educational Directorate

1. **(A)** 1. c. air sacs. 2. b. oxygen
3. c. electric 4. b. yeast fungus

(B) 1. A sound is produced due to the vibration of the piece of rubber band.
2. Dust and microbes will enter the respiratory system.

2. **(A)** 1. Tissue. 2. Ileum.
3. Sound. 4. Producers.

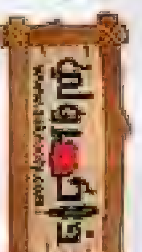
(B) Organs – Cells.

3. **(A)** 1. 32 2. Diaphragm
3. three 4. iodine

(B) 1. Sound energy.
2. Heat energy.

4. **(A)** 1. d 2. c 3. a 4. b

(B) 1. Due to the change of kinetic energy into heat energy.
2. To warm air before entering the lungs.



Additional questions

(A) 1. c. electric circuit.
2. b. current electricity.
(B) The electric switch

Aswan Governorate

25 Aswan Educational Directorate

1. **(A)** 1. work. 2. Light – heat – sound
3. down – up 4. carbon dioxide

(B) 1. The cell. 2. Inhalation process.

2. **(A)** 1. b. small intestine.
2. a. producers.
3. a. Kinetic energy
4. a. heat
5. c. yeast fungus

(B) To warm air before entering the lungs.

3. **(A)** 1. (✗) 2. (✓) 3. (✗) 4. (✓)

(B) 1. lungs. 2. plasma membrane

4. **(A)**

Producers	Consumers	Decomposer
Green plant	Lion – Human	Bread mold fungus.

(B)

Used energy	Produced energy
Eectric energy	Light energy.

Additional questions

(A) 1. (✗) 2. (✓)
(B) current electricity.

Guide Answers of Final Exams

PART THREE

2018



Cairo Governorate

1 Maadi Educational Zone
Sakkara Language School

1 (A) 1. b. energy.
2. c. all the pervious answers
3. b. Battery
4. a. Green algae
5. b. sound energy.

(B) 1. It secretes bile juice in the small intestine.
2. Absorbs the sunlight that is necessary for plants to make their own food by the photosynthesis process.
3. It controls the substances that enter or leave the cell.

2 1. electric - kinetic
2. mouth. 3. vibration
4. blue. 5. Cell wall - cell membrane

3 (A) 1. Electric energy.
2. Photosynthesis process.
3. Decomposers.
4. Plant cell.
5. Trachea.

(B) 1. Because they don't make their own food, but they depend on consumers that previously fed on producers to get their food.
2. Because it is used in making bread and alcohol.

4 (A) 1. (✓) 2. (✓)
3. (✗) 4. (✗)
5. (✓)

(B) 1. The plant cell.
2. ① Sap vacuole.
② Cell wall.
③ Nucleus.

2 New Cairo Zone
Manor House International School

1 1. work.
2. cell wall - chloroplasts.
3. tissues.
4. light
5. duodenum - ileum.

2 (A) 1. Yeast fungus. 2. Oxygen gas.
3. Sound energy. 4. Electric circuit.
5. Light energy.

(B) 1. cells. 2. Producers.
3. Dynamic electricity

3 (A) 1. b. carbon dioxide
2. a. Cytoplasm
3. c. The animal cell
4. b. sound
5. c. consumers.

(B) 1. (✗) 2. (✗)
3. (✓)

4 (A) 1. Some electric charges are formed on it.
2. Their green leaves become yellow and weak.

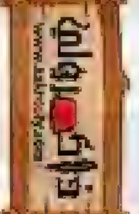
(B) 1. Because it supports the plant cell and gives it a definite shape.
2. Plants use sunlight to make photosynthesis, human depends on plants in feeding.

3 Al-Nasr Official Language School

1 (A) 1. plant
2. light
3. small intestine.
4. Dynamic
5. exhalation

(B) 1. Ileum. 2. Yeast fungus.
3. Cow.

2 (A) 1. (✗) 2. (✗)
3. (✓) 4. (✗)
5. (✓)



(B) 1. Because they can make their own food by photosynthesis process.
2. Because the kinetic energy changes into heat energy.
3. Because exhaled air contains carbon dioxide gas.

3 (A) 1. b. battery
2. a. Bile juice
3. a. tissue.
4. b. consumer
5. c. heat

(B) 1. Oxygen gas. 2. The cell.
3. Static electricity.

4 (A) 1. electric switch
2. inhalation
3. plant
4. tissues.
5. sound

(B) 1. - They help us to get rid of dead organisms and plant remains.
- They increase the soil fertility.
- They are used in a lot of industries.
2. Absorb the sunlight that is necessary for plants to make their own food by the photosynthesis.
3. They cut and tear food into small pieces.

4 Nasr City Educational Manage
Nasr City Language School

1 1. Oxygen gas - strach
2. Pancreatic juice - bile juice
3. Sound - heat
4. down - up

2 (A) 1. (✗) 2. (✗)
3. (✗) 4. (✗)
5. (✓)

(B) 1. Sound energy.
2. Light energy.
3. Electric energy.

3 1. The cell. 2. Dynamic electricity.
3. Organ. 4. Decomposers.

4 (A) 1. b. duodenum
2. c. electric
3. d. static ، dynamic
4. b. Yeast fungus
5. c. electric circuit.

(B) 1. Because during rubbing the balloon, electric charges are formed on its surface causing the attraction to the wall.
2. Because the kinetic energy changes into heat energy.

5 Al-Orman Smart Language School

1 1. carbon dioxide - oxygen
2. cell wall. 3. fats - fatty emulsion.
4. down - up 5. electric - sound

2 (A) 1. (✓) 2. (✗) 3. (✓)
4. (✓) 5. (✓) 6. (✗)

(B) 1. Changes kinetic energy into electric energy.
2. Making alcohol and bread.

3 (A) 1. Static electricity.
2. The cell.
3. Energy.
4. Consumers.
5. Small intestine.

(B)

Producer	Consumer	Decomposer
Green algae	Tiger	Bread mold fungus.

4 (A) 1. a. heat
2. b. cells.
3. c. electric
4. a. Rectum
5. c. electric circuit.
6. b. electric

(B) 1. Because they grind food.
2. Because they can make their own food by photosynthesis process.

Giza Governorate

6 Om El-Momeneen Language School

1
1. carbon dioxide
2. bread
3. electric - light.
4. Sound - heat
5. alveoli.
6. chloroplasts.

2 (A)
1. a. carbon dioxide
2. a. energy.
3. b. heat
4. c. consumer
5. c. saliva

(B)
1. plant
2. ① Nucleus. ② Cell wall.

3 (A) 1. (✓) 2. (✗) 3. (✓) 4. (✓) 5. (✓) 6. (✗)

(B)
1. Because they can make their own food by photosynthesis process.
2. To perform different functions as cutting, tearing and grinding food.

4 (A)
1. Producers.
2. Sound energy.
3. Energy.
4. Gastric juice.
5. The cell.

(B)

Producers	Consumers	Decomposers
- Plants.	- Cat.	- Bread mold fungus.
- Green algae.	- Lion.	- Bacteria.

7 The Egyption International School

1
1. cell wall - chloroplasts.
2. Green plant - fungus
3. Sound
4. light
5. static electricity.
6. Oxygen

2 (A)
1. tissue.
2. Static
3. Small intestine
4. Cell wall
5. starch.
6. Sound

(B)
1. It is the building unit of the plant body.
2. They are digestive substances that digest food and convert it into simple substances.

3 (A)
1. a. cytoplasm
2. b. sound energy.
3. a. cytoplasm.
4. a. heat
5. c. carbon dioxide gas
6. c. battery.

(B)
1. The lamp will not light.
2. The paper will be heated up and it may burn if it is exposed to the Sun rays for a long period of time.

4 (A)
1. Cytoplasm.
2. Decomposers.
3. Electric energy.
4. Two lungs.

(B)
1. To absorb sunlight which is necessary for making photosynthesis process.
2. Because sound is produced due to the vibration of objects.
3. To warm air before entering the two lungs.

(C)

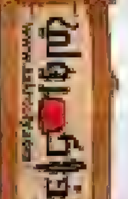
Producers	Consumers	Decomposers
- Corn plant.	- Human.	- Yoghurt bacteria.
- Green algae.	- Cat.	- Yeast fungus.

8 South Giza Educational Directorate

1
1. cell wall - chloroplasts.
2. vibration
3. oxygen gas - starch.
4. bread - alcohol.
5. alveoli.

2 (A)
1. c. running
2. b. battery.
3. a. heat
4. a. Larynx

(B) 1. (✗) 2. (✓) 3. (✓) 4. (✓)



3 (A)
1. To absorb sunlight which is necessary for plant to make its own food by photosynthesis process.
2. Because it has no cell wall.

(B)
1. Energy.
2. Liver.
3. Piano.
4. Trachea.

4

Producer	Consumers	Decomposers
- Green plant.	- Rabbit.	- Bacteria.
- Green algae.	- Cat.	- Fungi.
- Bean plant.	- Dog.	

Alexandria Governorate

9 Taymour English School

1 (A)
1. Stomach
2. heat
3. Yeast fungus - bacteria
4. battery
5. larynx

(B)
1. Sunlight.
2. Carbon dioxide gas from air.
3. Mineral salts and water from soil.

2 (A)
1. Because it has cell wall.
2. Because bile juice, pancreatic juice and intestinal juice that are poured in small intestine complete the digestion of food.

(B) 1. (✗) 2. (✗) 3. (✗) 4. (✓) 5. (✓)

3 (A)
1. The cell.
2. Electric motor.
3. Static electricity.
4. Consumers.
5. Tissue.

(B)
1. They help us to get rid of dead organisms and plant remains.
2. Change light energy into electric energy, that is used in houses.

4 (A)

Points of comparison	Animal cell	Plant cell
1. Chloroplasts :	Absent.	Present.
2. Nucleus :	Present.	Present.

(B)
1. Sound energy.
2. Light energy.
3. Kinetic energy.

10 West Eductional Directorate

1
1. oxygen gas - starch.
2. work.
3. plant - animal
4. electric - heat
5. Digestive

2 (A) 1. (✓) 2. (✓) 3. (✗) 4. (✓) 5. (✗)

(B)
1. Electric energy.
2. Electric switch.
3. System.
4. Sound energy.
5. Bronchi.

3
1. yeast fungus.
2. ⓐ Cell wall. ⓑ Cytoplasm. ⓒ Vacuole. ⓓ Nucleus.
3. 1. Bread. 2. Alcohol.

4 (A)
1. b. violin.
2. b. green parts
3. c. (a) and (b).
4. b. incisors and canines.
5. c. Green algae
6. c. Carbon dioxide

(B)
1. Because they contains large amounts of fast.
2. Due to absence of chloroplasts.

11 East Educational Zone

1
1. esophagus - trachea.
2. cells.
3. stomach - mouth.
4. Battery
5. light - electric

2 (A)
1. Consumers.
2. Ileum.
3. Incisors and canines.
4. Alveoli.
5. Static electricity.
6. Diaphragm.

(B)
1. Because it is used in making bread and alcohol.
2. Because the nose is lined with :
   - Hairs and mucous layer to filter the air from dust and microbes.
   - Blood capillaries to warm the air before entering the two lungs.

3 (A) 1. (×) ...... in the small intestine.
2. (×) ...... by plasma membrane.
3. (✓) 4. (✓) 5. (✓)
6. (×) ...... and stomach are ......

(B) 1. It secretes bile juice in small intestine.
2. Absorbs the sunlight that is necessary for plants to make their own food by the photosynthesis process.
3. It controls the substances that enter or leave the cell.

4 (A) 1. b. carbon dioxide
2. c. sensation.
3. b. small intestine
4. b. plasma membrane

(B) 1. ① Nucleus. ② Cell wall. ③ Chloroplasts.
2. They absorb the sunlight that is necessary for plants to make their own food by the photosynthesis process.

12 Qalyoubia Governorate Official Schools Directorate

1 (A) 1. b. running
2. d. alveoli.
3. c. chloroplasts.
4. c. oxygen
5. b. sound
6. b. Mouth

(B) 1. d 2. b 3. c 4. a

2 (A) 1. Kinetic - electric
2. Bacteria - yeast fungus
3. cell wall - plasma membrane.
4. inhalation - exhalation
5. Green plants - green algae
6. ileum - blood.

(B) 1. To let the body benefits from it.
2. To allow the exchange of gases.

3 (A) 1. Energy. 2. The cell.
3. Sunlight. 4. Consumers.
5. Potential energy. 6. Solar heater.

(B) 1. It is used to detect the presence of starch.
2. It is the source of electric current.

4 (A) 1. (✓) 2. (✓) 3. (×)
4. (×) 5. (×) 6. (✓)

(B) - **Producers :** Green plant.
- **Consumers :** Lion - Human.
- **Decomposers :** Bread mold fungus.

13 El-Sharkia Governorate Science Inspectorate

1 1. alcohol.
2. Bile juice - pancreatic juice
3. carbon dioxide 4. green algae
5. stomach - ileum.
6. cell wall - chloroplasts.

2 1. The cell. 2. Static electricity.
3. Producers. 4. Inhalation process.
5. Energy. 6. Electric circuit.
7. Stomach. 8. Stomach.

3 (A) 1. c. decomposer. 2. a. oxygen
3. b. iodine solution. 4. c. liver.

(B) Starch will not change into sugar in mouth.

(C) Due to absence of chloroplasts.

4 1. (✓) 2. (✓) 3. (×)
4. (×) 5. (×) 6. (×)
7. (✓) 8. (✓)

Menofia Governorate

14 Shebeen El-Koum Educational Directorate

1 1. cells. 2. Oxygen.
3. Chemical - electric.
4. energy - hearing.
5. cell wall - chloroplasts.

2 (A) 1. Energy. 2. The cell.
3. Potential energy. 4. Carbon dioxide gas.
5. Current electricity. 6. Cytoplasm.

(B) 1. The clear limewater becomes turbid.
2. The small bits of paper will be attracted to the rubbed ruler.



3 (A) 1. b. carbon dioxide
2. a. Solar cell 3. c. large intestine.
4. c. chloroplast. 5. b. duodenum.

(B) 1. Because the kinetic energy changes into heat energy.
2. Due to the presence of cell wall that determines the cell shape.

4 (A) 1. (×) 2. (×) 3. (✓)
4. (×) 5. (×)

(B)

Producers	Consumers	Decomposers
- Green plant.	- Tiger.	- Bread mold fungus.
- Green algae.	- Wild cat.	- Yoghurt bacteria.

15 El-Gharbeya Governorate Central Science Supervision

1 (A) 1. inhalation - exhalation.
2. cell wall - chloroplasts.
3. iodine - blue. 4. chemical - electric
5. light - heat
6. electric current - battery

(B) 1. Because they can make their own food by photosynthesis prosess.
2. Because it secretes bile juice that changes fats into fatty emulsion.

2 (A) 1. d. alveoli. 2. b. an organ.
3. c. oxygen 4. c. sound
5. a. liver. 6. a. static electricity.

(B) 1. It used in making bread and alcohol.
2. - They change light energy into electric energy, that is used in houses.
- They provide the satellites with electric energy to operate their equipments.

3 (A) 1. Respiration process.
2. The cell. 3. Consumers.
4. Energy. 5. Battery.
6. Esophagus.

(B) 1. Their green leaves become yellow and weak.
2. The paper will be heated up and it may burn if it is exposed to the Sun rays for a long period of time.

4 (A) 1. carbon dioxide
2. The plasma membrane
3. producers. 4. cells
5. anus. 6. Current

(B) 1. c 2. d 3. a 4. b

16 Dakahlia Governorate Educational Directorate

1 (A) 1. b. producers. 2. d. iodine.
3. d. stomach. 4. c. potential

(B) 1. Because it contains carbon dioxide gas.
2. Because it is the source of the electric current.
3. **Because :**
- They help us to get rid of dead bodies of organisms and plant remains.
- They increase the soil fertility.
- They are used in a lot of industries.
4. Because human can't make his food, but human depend on producers and consumers to get his food.

2 (A) 1. cell wall - chloroplasts.
2. down - up 3. system - tissue.
4. oxygen gas - starch.

(B) 1. Digestive enzymes.
2. Static electricity.
3. Plasma membrane. 4. Energy.

3 (A) 1. (✓) 2. (×) 3. (✓)

(B) 1. plant
2. ① Sap vacuole. ② Nucleus.
③ Cytoplasm. ④ Cell wall.

4 (A)

Tools	Energy used	Energy produced
1. Solar heater.	Light.	Heat.
2. Battery.	Chemical.	Electric.
3. Electric motor	Electric.	Kinetic.

(B) 1. It is used in making bread and alcohol.
2. It organizes the biological operations in the cell and it is resposible for the cell division.
3. It supports the plant cell and gives it a definite shape.

(C) 1. Avoid being in crowded or poor ventilation places.
2. Keep off the severe cold.

17 Ismailia Governorate Directorate Of Education Science Inspectorate

❶ (A) 1. Digestive enzymes
2. bread - alcohol. 3. static - current.
4. producer - consumer.

(B)

Equipment	Energy produced
1. Electric fan.	Kinetic.
2. Dynamo.	Electric.
3. Violin.	Sound.
4. Electric heater.	Heat.

❷ (A) 1. Tissue.
2. Large intestine.
3. Inhalation process.
4. Oxygen gas.

(B) a. ① Connecting wires.
② Electric switch.
③ Battery.
b. It is the source of electric current.

❸ (A) 1. c. Fungi 2. d. iodine
3. a. Energy 4. d. (a) , (b) and (c)
5. b. Sound

(B) 1. Due to the absence of chloroplasts.
2. Because stomach secretes gastric juice that makes incomplete digestion of proteins, while the complete digestion of proteins occurs in small intestine.

❹ (A) 1. the potential 2. Bile juice
3. Diaphragm 4. producers.

(B) 1. d 2. a 3. b 4. c

18 Suez Governorate Directorate of Education

❶ (A) 1. decomposers. 2. Oxygen
3. iodine solution. 4. work.
5. light 6. duodenum.
7. energy.

(B) You feel warm.

❷ (A) 1. b. chloroplast.
2. c. yeast fungus
3. b. consumers.
4. c. electric

(B) 1. The cell. 2. Producers.
3. Tongue. 4 Inhalation process.

❸ (A) 1. (✓) 2. (✓) 3. (✗)
4. (✗) 5. (✓)

(B) 1. Because food is not completely digested in stomach.
2. **Because :**
- They help us to get rid of dead bodies of organisms and plant remains.
- They increase the soil fertility.
- They are used in a lot of industries.

❹ (A) ① Lamp.
② Electric switch.
③ Connecting wires.
④ Batteries.

(B) 1. plasma membrane 2. Decomposers
3. Sound 4. cells.

19 Damietta Governorate Science Inspectorate

❶ (A) 1. gastric - protein
2. producers - decomposers.
3. stomach.
4. cell wall - chloroplasts.
5. chemical - electric

(B) 1. To change (digest) starch into simple substances called sugar.
2. Due to the absence of chloroplasts.

❷ (A) 1. Photosynthesis process.
2. Organ. 3. Solar cell.
4. Energy. 5. Static electricity.

(B) 1. Electric Energy.
2. Kinetic energy.
3. Sound energy.

❸ (A) 1. producers. 2. ileum.
3. Nucleus 4. The cell
5. potential energy.
6. small intestine.

(B) 1. It controls the substances that enter or leave the cell.
2. It contains digestive enzymes that change starch into simple substances called sugar.

❹ (A) 1. c. electric circuit. 2. d. (a) and (c)
3. b. electric 4. d. (a) and (b).
5. b. consumers

(B) 1. The lamp will not light.
2. Sound energy is produced.
3. Ribs move upwards and the size of thoracic cavity increases.

20 Kafr El-Shiekh Governorate Educational Directorate

❶ (A) 1. c. heat 2. b. photosynthesis.
3. c. rotation. 4. a. Cows
5. b. alveoli.

(B) 1. Dynamo. 2. Spring.
3. Battery. 4. Convergent lens.

❷ (A) 1. The plant cell. 2. Sound.
3. Fungi. 4. Energy.

(B) 1. electric charges 2. solar cells

❸ (A) 1. b. Plants will not grow.
2. b. The water will remain cool.

(B) 1. (✓) 2. (✗) 3. (✓)
4. (✗) 5. (✓)

❹ (A) 1. c 2. d 3. a 4. b

(B) 1. Because it is digested and changed into sugar by saliva which is secreted in mouth.
2. Because the complete digestion of different types of food and the absorption of food occur in it.

21 El-Behira Governorate Science Supervision

❶ 1. alveoli. 2. electric
3. bread - alcohol.
4. vibration of objects.
5. Decomposers
6. cell wall - chloroplasts.

❷ (A) 1. System. 2. The plant cell.
3. Photosynthesis process.
4. Energy. 5. Static electricity.
6. Salivary glands.

(B) 1. Because vitamin "C" is necessary to keep the respiratory system healthy.
2. Because the kinetic energy changes into heat energy.

❸ (A) 1. b. Esophagus 2. c. oxygen
3. b. Esophagus 4. d. (a) or (c)
5. d. all the previous answers.

(B)

P. O. C	Inhalation process	Exhalation process
1. Definition :	it is a process by which air enters the two lungs.	it is a process by which air is expelled out of the two lungs.
2. Diaphragm muscle :	It contracts and moves down.	It relaxes and moves up.
3. Movement of the ribs :	They rise upwards.	They move downwards.

❹ (A) 1. It changes kinetic energy into electric energy.
2. It is responsible for the cell division.

(B)

Producers	Consumers	Decomposers
- Grass.	- Cow.	- Yeast fungus.
- Rice plant.	- Human.	- Bacteria.

22 Fayoum Governorate Science Supervision Governmental Laguage School

❶ 1. inhalation - exhalation.
2. Oxygen - carbon dioxide.
3. light 4. kinetic
5. flow 6. static

❷ (A) 1. blood 2. pancreas.
3. producers. 4. iodine

(B)

Producers	Consumers	Decomposers
- Corn plant.	- Dog.	- Yeast fungus.
- Green algae.	- Lion.	- Yoghurt bacteria.
- Tree.	- Human.	

3 (A) 1. The cell. 2. Producers.
3. Energy. 4. Sound.
5. Molars. 6. Current electricity.

(B) 1. Because during rubbing the balloon, electric charges are formed on its surface causing the attraction to the wall.
2. **Because :**
- They help us to get rid of dead bodies of organisms and plant remains.
- They increase the soil fertility.
- They are used in a lot of industries.

4 1. b. consumers. 2. c. decomposer.
3. c. yeast fungus 4. b. Chloroplast.
5. c. Stomach 6. a. 7 metres.
7. • b. 1 , 2 , 4
• d. 3 , 5

23 Beni Suef Governorate – Ali Mubarak Language School

1 (A) 1. a. heat 2. b. yeast fungus.
3. b. nose.

(B) 1. Due to the absence of chloroplasts.
2. Because they can make their own food by photosynthesis prosess.

2 (A) 1. The cell.
2. Current electricity.
3. Inhalation process. 4. Organ.

(B) 1. potential 2. Battery 3. cilia

3 (A) 1. vibration of objects.
2. digestion - absorption.
3. small intenstine. 4. Oxygen

(B) 1. It is the ability to do work.
2. It is living organism that gets its food by decomposing the organic wastes as dead bodies, plant remains and decayed food.

4 (A) 1. (✗) 2. (✗) 3. (✗) 4. (✓)

(B) 1. Avoid being in crowded or poor ventilation places.
2. Keep off the severe cold.

24 El-Minia Governorate – Minia Educational Zone

1 (A) 1. a. Green plants
2. b. carbone dioxide 3. c. energy.
4. b. sensation. 5. b. electric circuit.

(B) 1. Your hair will stand and attract to the comb.
2. The exchange of gases will not occur.

2 1. digestive canal - digestive canal supplementaries.
2. mouth - anus. 3. cell.
4. Electricity 5. abdominal
6. Oxygen 7. plant
8. dead

3 (A) 1. (✗) 2. (✗) 3. (✗) 4. (✓)

(B) 1. b 2. d 3. a 4. c

4 (A) 1. ⓐ Vacuole. ⓑ Cell wall.
ⓒ Nucleus. ⓓ Cytoplasm.
2. yeast fungus.

(B) 1. Because it is the source of the electric current.
2. To filter the air from dust and microbes before entering the two lungs.

25 Assiut Governorate – Assiut Educational Directorate

1 (A) 1. The cell 2. Nucleus
3. Sunlight 4. vibration
5. Urinary 6. carbone dioxide

(B) 1. Due to the formation of the electric charges on the ruler causing the attraction of paper bits.
2. **Because :**
- They help us to get rid of dead organisms and plant remains.
- They increase the soil fertility.
- They are used in a lot of industries.

2 (A) 1. d. bread mold. 2. c. tongue.
3. d. electric circuit. 4. a. tissues.
5. b. alveoli.

(B)

Cell parts	Animal cell	Plant cell
1. Cell wall :	Absent	Present
2. Chloroplasts :	Absent	Present
3. Small vacuoles :	Present	Absent
4. Sap vacuole :	Absent	Present

(C) 1. The food cannot be mixed well with saliva and also we cannot taste the food.
2. Proteins are not digested into simple food substances.
3. The air will not be warmed before entering the lungs.

3 (A) 1. e 2. f 3. c
4. d 5. b 6. a

(B) 1. It is used in making bread.
2. It controls the substances that enter or leave the cell.

4 (A) 1. (✓) 2. (✗) 3. (✓)
4. (✗) 5. (✗) 6. (✓)

(B) 1. It is the building unit of the living organism's body.
2. It is the electric charges that flow through connecting wires for long distances forming the electric current.

26 Sohag Governorate – Sohag Educational Directorate

1 (A) 1. The cell. 2. Potential energy.
3. Electric circuit. 4. Inhalation process.

(B)

Producers	Consumers	Decomposers
- Corn plant.	- Human. - Lion.	- Yoghurt bacteria.

2 (A) 1. down - up 2. carbone dioxide
3. light - electric 4. cells.

(B) 1. Because sound is produced from the vibration of objects.
2. To provide us with vitamin "C" that is necessary to keep the respiratory system healthy

3 (A) 1. c. green plastid.
2. c. static and current.
3. b. duodenum.
4. a. Bread mold fungus
5. d. alveoli.

(B)

	Produced energy
1. Dynamo.	Electric energy.
2. Rubbing your hands.	Heat energy.
3. Electric fan.	Kinetic energy.

4 (A) 1. b 2. d 3. a 4. c

(B) 1. (✗) 2. (✓) 3. (✓) 4. (✗)

27 Luxor Governorate – Luxor Educational Directorate

1 (A) 1. b. carbon dioxide gas 2. a. digestive
3. c. battery. 4. c. sound

(B) 1. Because they can make their own food by photosynthesis process.
2. Due to the change of kinetic energy into heat energy.

2 (A) 1. Duodenum 2. light - electric
3. iodine solution. 4. work.
5. thoracic

(B) 1. Green plants. 2. Lion.

3 (A) 1. Consumers. 2. Potential energy.
3. Digestive canal. 4. Oxygen gas.
5. Nose.

(B) 1. Heat energy. 2. Kinetic energy.
3. Light energy. 4. Sound energy.

4 (A) 1. consumers. 2. anus.
3. kinetic 4. producer
5. sound 6. blue

(B) 1. They increase the soil fertility.
2. It changes kinetic energy into electric energy.

28 Aswan Governorate – M.m. Yakoub Language School

1 (A) 1. Esophagus 2. static
3. vibration 4. carbone dioxide
5. electric

(B) 1. Current electricity. 2. Energy.
3. Sound energy. 4. Alveoli.

2 (A) 1. a. producers.
2. c. yeast fungus
3. a. heat energy.
4. c. electric circuit.
5. b. photosynthesis.
6. c. green plastid.

(B) 1. To absorb sunlight that is necessary for photosynthesis process.
2. Due to the formation of the electric charges on the ruler causing the attraction of paper bits.

3 (A) 1. (✓) 2. (×) 3. (×)
4. (×) 5. (×) 6. (×)

(B) 1. Light energy. 2. Electric energy.

4 (A) 1. The plasma membrane
2. Decomposers
3. heat
4. Epiglottis

(B)

Producers	Consumers	Decomposers
- Green plant. - Green algae.	- Lion. - Human.	- Bread mold fungus.

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1 (A) 1. light 2. cell wall.
3. electric - heat 4. iodine solution.

(B) 1. Because they can make their own food by photosynthesis process.
2. Because the exhaled air is rich in carbon dioxide gas and water vapour, while the inhaled air is rich in oxygen gas.

(C) 1. Avoid being in crowded or poor ventilation places.
2. Keep off the severe cold.
3. Eat fruits rich vitamin "C" such as orange and guava to protect yourself from cold.
4. Stop smoking or being a passive smoker, because it leads to cancer causing death.

2 (A) 1. (✓) 2. (✓) 3. (×)
4. (✓) 5. (×)

(B) 1. Heat energy.
2. Sound energy.
3. Kinetic energy.

(C)

Producers	Consumers	Decomposers
- Maize plant. - Green algae.	- Dog. - Lion. - Human.	- Yeast fungus. - Yoghurt bacteria.

3 (A) 1. b. bacteria
2. c. carbon dioxide
3. b. electric
4. c. Wool piece.
5. c. large intestine.

(B) It is used to close and open the electric circuit.

(C) 1. ① Cell wall.
② Vacuole.
③ Nucleus.
2. It is used in making bread and alcohol.

4 (A) 1. Decomposers. 2. Pharynx.
3. Electric circuit. 4. Energy.
5. Respiration process.

(B) 1. The kinetic energy changes into sound energy so you hear a sound.
2. The soil fertility decreases and the dead bodies of organisms will remain in nature that cause many diseases.

(C) 1. It changes light energy into electric energy, that is used in houses.
2. It provides the satellites with electric energy to operate their pieces of equipement.

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1 1. 9 - 10
2. vibration of objects. 3. carbone dioxide
4. down - up 5. light - electric
6. abdominal

2 (A) 1. c. bean. 2. c. chloroplast.
3. b. yeast funges 4. b. cells.

(B) 1. (×) 2. (×) 3. (✓)
4. (✓) 5. (✓) 6. (×)

3 (A) 1. Inhalation process.
2. Sound energy.
3. The cell.
4. Static electricity.

(B) 1. Because they can make their own food by photosynthesis process.
2. Because it changes the complex food substances into simple food substances to let the body gets benefit from them.

4 (A) 1. plasma membrane
2. Decomposers 3. heat
4. decomposer
5. cytoplasm. 6. electric

(B) 1. Some electric charges are formed on it.
2. The soil fertility decreases and the dead bodies of organisms will remain in nature that cause many diseases.